HT-K170

SERVICE MANUAL

AEP Model
UK Model
E Model
Australian Model
Chinese Model

- HT-K170 is composed of following models.
  As for the service manual, it is issued for each component model, then, please refer to them.

COMPONENT MODEL NAME

	HT-K170		
INTEGRATED AV AMPLIFIER	TA-VE170		
SPEAKER SYSTEM	SA-VE215	SUBWOOFER SPEAKER	SA-WMS215
		FRONT,CENTER,REAR SPEAKERS	SS-MS215

- Abbreviation
  SP : Singapore model
  MY : Malysia model
  HK : Hong Kong model
  CH : Chinese model

SPECIFICATIONS

General

Power requirements	220-230V AC, 50/60 Hz
Power consumption	45 watts
Dimensions (w/h/d)	Approx. 240 x 285 x 355 mm incl. projecting front panel
Mass	Approx. 8 kg

Supplied accessories

Remote Commander (1)
Size AA (R6) Batteries (2)
Scart adaptor (1)
Speakers (5)
  Front speakers (2)
  Rear speakers (2)
  Center speaker (1)
Subwoofer (1)
Speaker connecting cord, 10 m (2)
Speaker connecting cord, 2.5 m (3)
Monaural connecting cord (1 phono to 1 phono) (1)
Foot pads (20)

Design and specifications are subject to change without notice.

PARTS LIST

Part No.	Description	Remark
	ACCESSORIES & PACKING MATERIALS **********	
1-476-168-11	REMOTE,COMMANDER (RM-U170)	
1-791-773-11	ADAPTOR (UK,HK)	
1-769-329-21	CORD,CONNECTION (PIN-PIN)	
1-769-433-11	CORD,SPEAKER (10m)	
1-769-433-21	CORD,SPEAKER (2.5m)	
4-230-316-11	MANUAL,INSTRUCTION (DUTCH,SWEDISH,FRENCH,ENGLISH)(AEP)	
4-230-316-21	MANUAL,INSTRUCTION (DANISH,PORTUGUESE,SPANISH,ITALIAN)(AEP)	
4-230-316-31	MANUAL,INSTRUCTION (ENGLISH,CHINESE)(HK,MY,SP,CH)	
4-230-316-41	MANUAL,INSTRUCTION (ENGLISH)	
4-228-696-01	COVER, BATTERY (FOR RM-U170)	
4-972-322-01	FOOT (Y)	

HOME THEATER SYSTEM

SONY

9-929-502-11

Sony Corporation
Audio Entertainment Group

2000G001661-1
Printed in Japan ©2000.7
Published by HA Quality Assurance Dept.

TA-VE170

SERVICE MANUAL

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Chinese Model

- This set is the Amplifier section in HT-K170.

Manufactured under license from Dolby Laboratories Licensing Corporation.
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SPECIFICATIONS

Power output

Rated Power Output at Stereo mode (DIN 1 kHz, 8 ohms) 25 W + 25 W

Reference Power Output (DIN 1 kHz, 8 ohms)
Front: 25 W /ch
Center: 25 W
Rear: 25 W /ch

Frequency response TV, VIDEO, DVD 2CH, 5.1 CH / DVD
10 Hz - 50 kHz +0.5 /–2 dB

Inputs

	Sensitivity	Impedance	S/N (weighting network, input level)
TV, VIDEO, DVD 2CH, 5.1 CH/ DVD	250 mV	50 kilohms	85 dB* (A, 250 mV)

*78IHF

Outputs WOOFER:
Voltage: 1 V
Impedance: 1 kilohms

Muting Full mute

General

Power requirements 220 - 230 V AC, 50 / 60 Hz

Power consumption 115 W

Dimensions 430 x 274 x 64.5 mm

Mass (Approx.) 4.6 kg

Design and specifications are subject to change without notice.

HOME THEATER SYSTEM

SONY®

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SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

Flexible Circuit Board Repairing

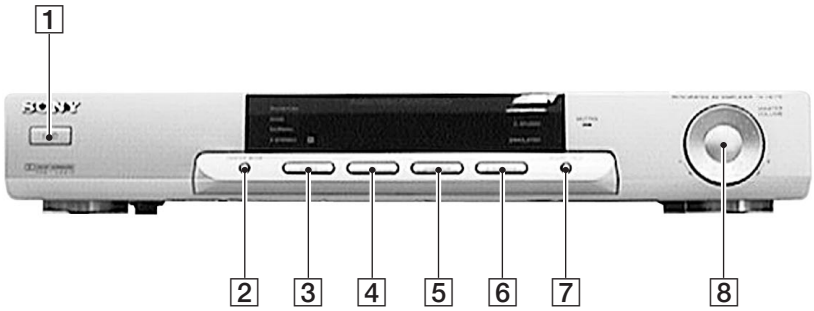
- Keep the temperature of soldering iron around 270˚C during repairing.
- Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
- Be careful not to apply force on the conductor when soldering or unsoldering.

与安全有关的零部件须知

在原理图上用阴影及⚠标记来识别的零部件在安全操作上是具有关键性的。这些零部件要用本手册中所示的部件号对应的索尼零部件进行更换。

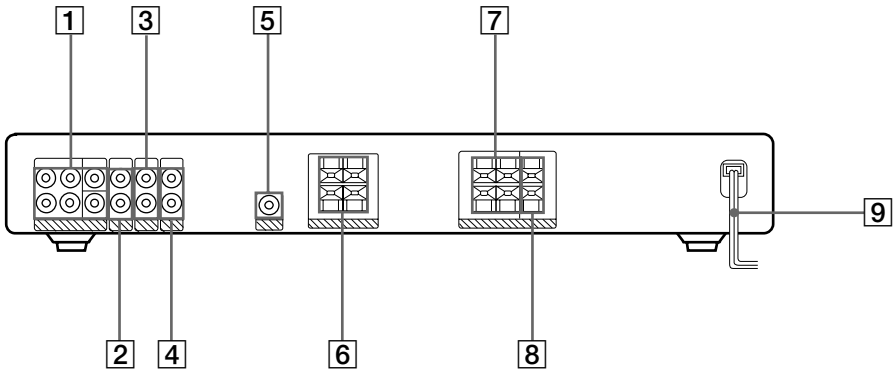
在安全操作上具有关键性的电路调整与索尼公司出版的维修手册完全一致。在更换关键零部件时或怀疑动作失常时，请进行这些调整操作。

SECTION 1
GENERAL



1 I/⏻ button
2 CENTER MODE button
3 VIDEO button
4 TV button
5 DVD 2CH button
6 5-1 CH/DVD button
7 SOUND FIELD button
8 MASTER VOLUME knob

This section is extracted from instruction manual.

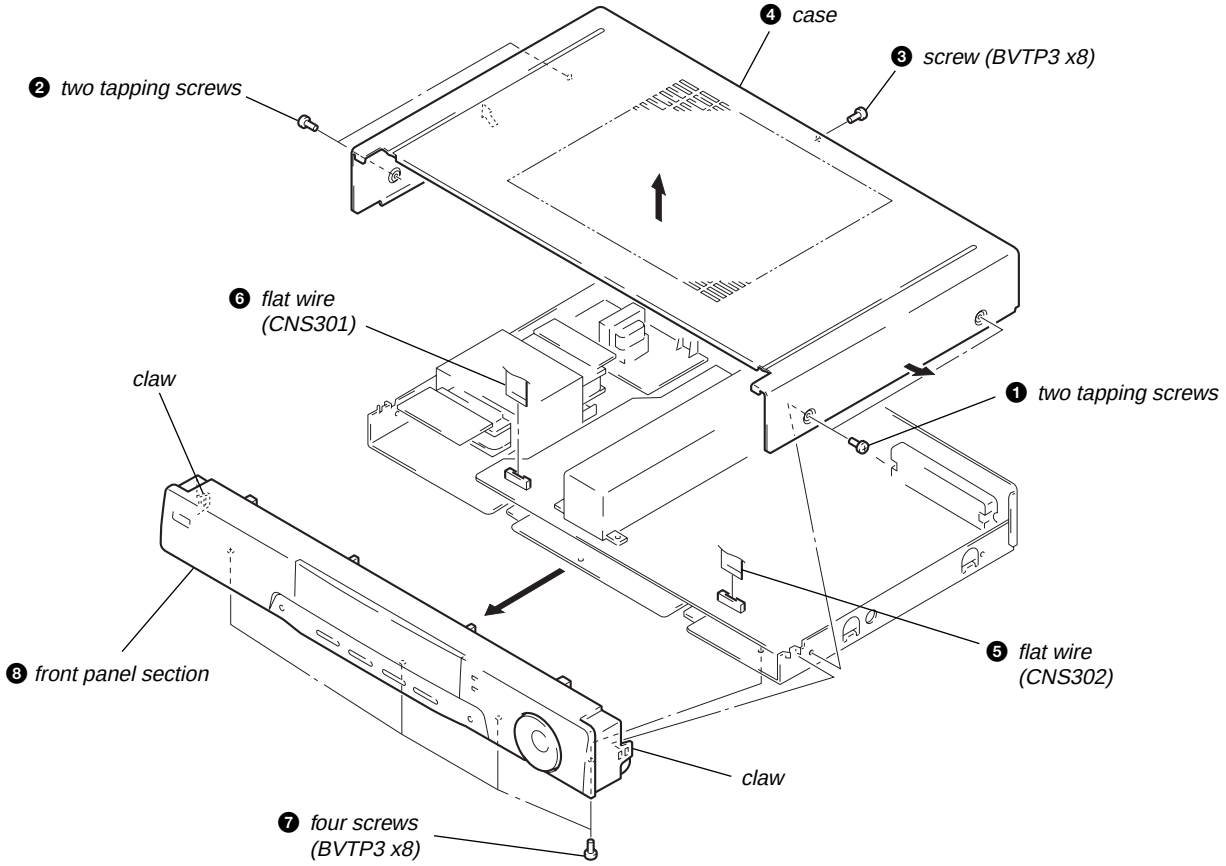


1 5.1 CH / DVD
2 DVD 2CH
3 TV
4 VIDEO
5 WOOFER
6 FRONT SPEAKER
7 REAR SPEAKERS
8 CENTER SPEAKER
9 Mains lead

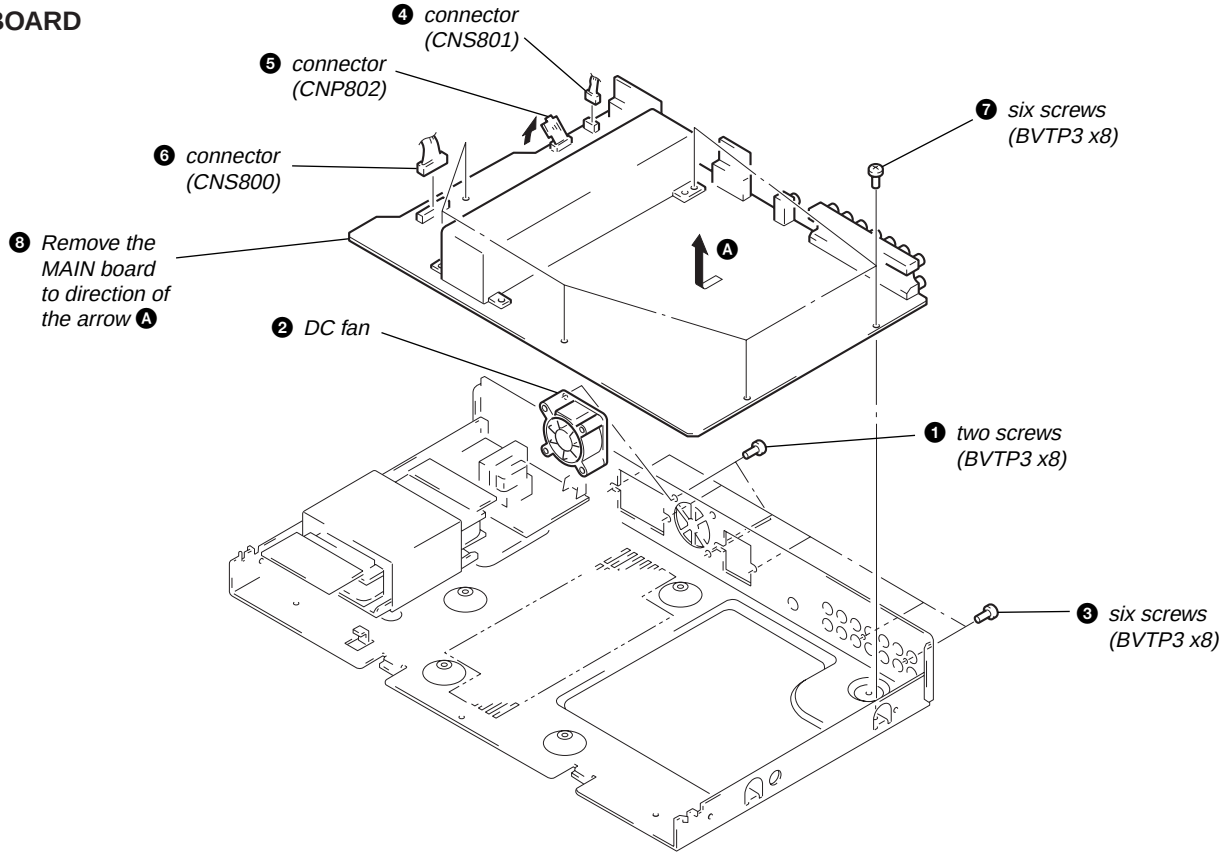
SECTION 2
DISASSEMBLY

Note: Follow the disassembly procedure in the numerical order given.

CASE, FRONT PANEL SECTION



MAIN BOARD


❹ connector (CNS801)
❺ connector (CNP802)
❼ six screws (BVTP3 x8)
❻ connector (CNS800)
❽ Remove the MAIN board to direction of the arrow Ⓐ
Ⓐ
❷ DC fan
❶ two screws (BVTP3 x8)
❸ six screws (BVTP3 x8)

SECTION 3
TEST MODE

This equipment is provided with a test mode built in the microcomputer. The contents are described in the following.

[Initial Mode]

1. Press [I/⏻] button while pressing both [TV] and [5.1CH/DVD] buttons simultaneously.
2. "INITIAL" is displayed on the fluorescent indicator tube, and the status of the unit is set in the following.

- All Memory is clear.
- Center, rear level set to 0.
- Center mode set to NORMAL.
- Muting clear.
- Volume level set to min.
- FAN is on.

[Factory Mode]

1. Press [I/⏻] button while pressing three buttons of [VIDEO], [DVD 2CH], and [5.1CH/DVD] simultaneously.
2. Factory setting same as initial except center mode set to normal using jog can set to volume max or min directly.

[FL Check Mode]

1. Press [I/⏻] button while both [CENTER MODE] and [TV] buttons simultaneously.
2. Fluorescent indicator tube and LED are checked, "FINISH" is displayed and the status of the unit is set back in normal condition.

[Gain Up Mode]

1. Press [I/⏻] button while pressing [SOUND FIELD] button.
2. "NOMAL" is displayed on the fluorescent indicator tube and the rear is gained up 3 dB.
3. To exit from this mode, press two buttons in the same manner as step1.
   "GAIN LOW" is displayed on the fluorescent indicator tube and the status of the unit is set back in normal condition.

[Version Mode]

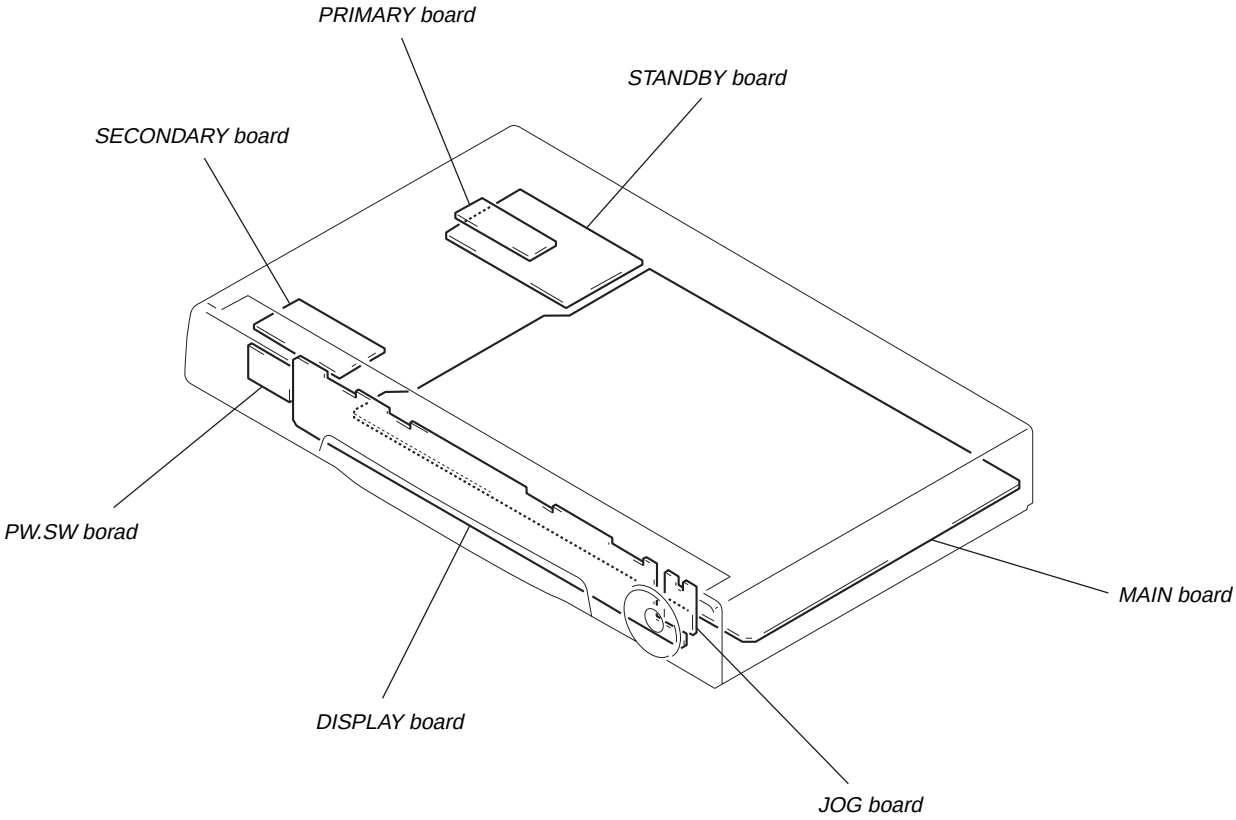
1. Press [I/⏻] button while pressing three buttons of [CENTER MODE], [DVD 2CH] and [SOUND FIELD] buttons simultaneously.
2. Version of its destination is displayed on the fluorescent indicator tube.

[FAN ON/OFF]

- Press [I/⏻] button while pressing [CENTER MODE] button.
- "FAN ON" ⟶ fan always turn on.
- "FAN AUTO"⟶ when micro computer detected enough input signal fan turn on automatically. Normally fan is off.

SECTION 4
DIAGRAMS

- **Circuit Boards Location**



4-1. NOTES FOR PRINTED WIRING BOARD AND SCHEMATIC DIAGRAM

Note on Schematic Diagram:

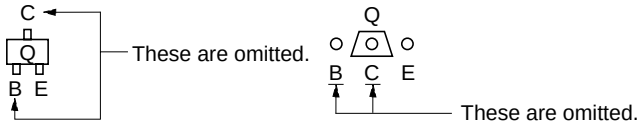
- All capacitors are in µF unless otherwise noted. pF: µµF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- △ : internal component.
- : nonflammable resistor.
- : panel designation.

Note:	**Note:**
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	以阴影和 ⚠ 标志来识别的零部件，在安全方面具有关键性，因此只能以规定号码的零部件来更换。

- B+ : B+ Line.
- B– : B– Line.
- Voltages and waveforms are dc with respect to ground under no-signal conditions.
- Voltages are taken with a VOM (Input impedance 10 MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
  - : FRONT/AUDIO IN
  - : REAR
  - : CENTER
  - : WOOFER

Note on Printed Wiring Board:

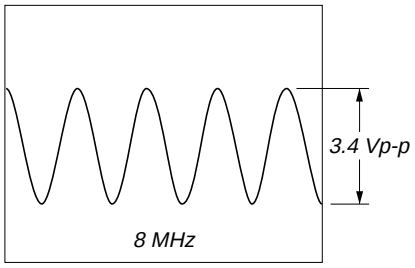
- : parts extracted from the component side.
- : Pattern from the side which enables seeing.
- Indication of transistor.



- **Waveforms**

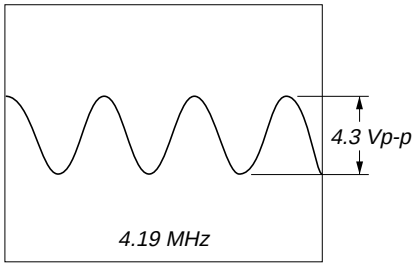
– MAIN Board –

❶ IC300 ㉛ (OSC)



– DISPLAY Board –

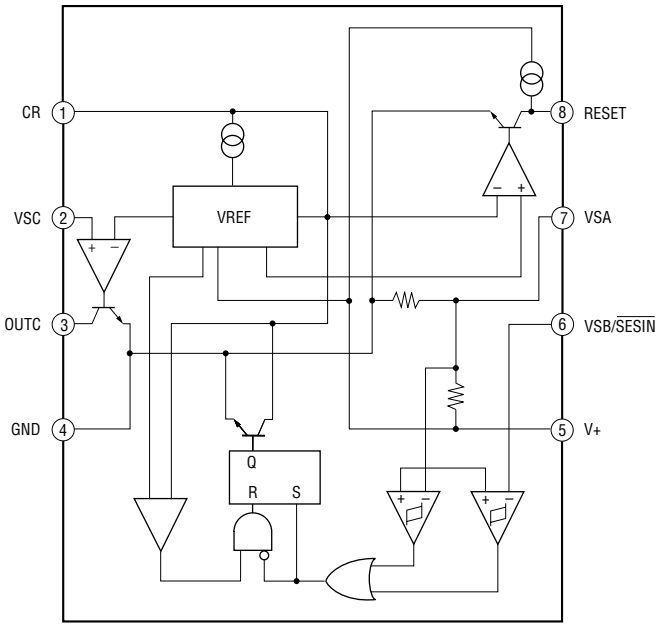
❶ IC201 ㉞ (X1)



• **IC Block Diagrams**

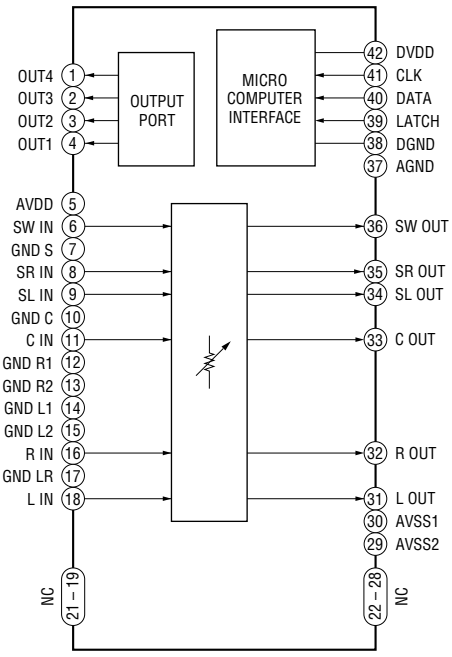
– STANDBY Board –

IC950 NJM2103D

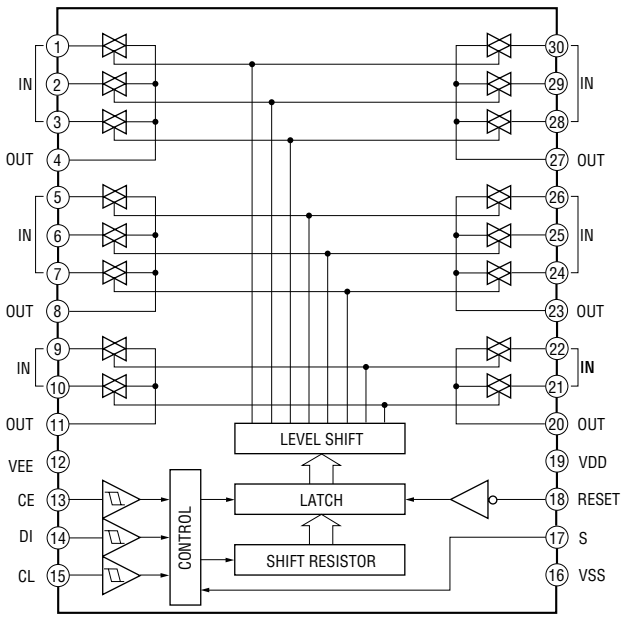


– MAIN Board –

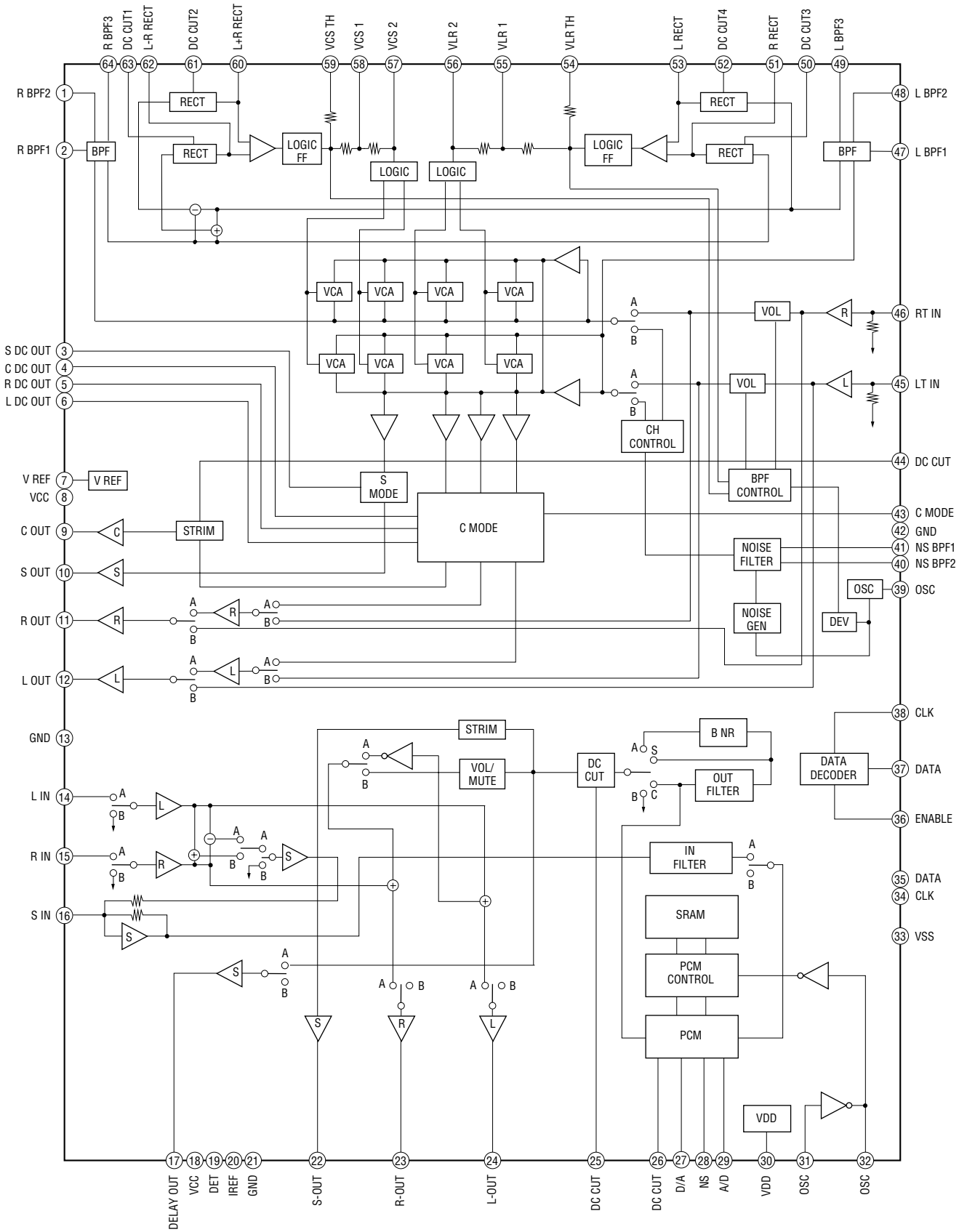
IC100 M62447SP



IC500 LC78212



IC300 LV1035M



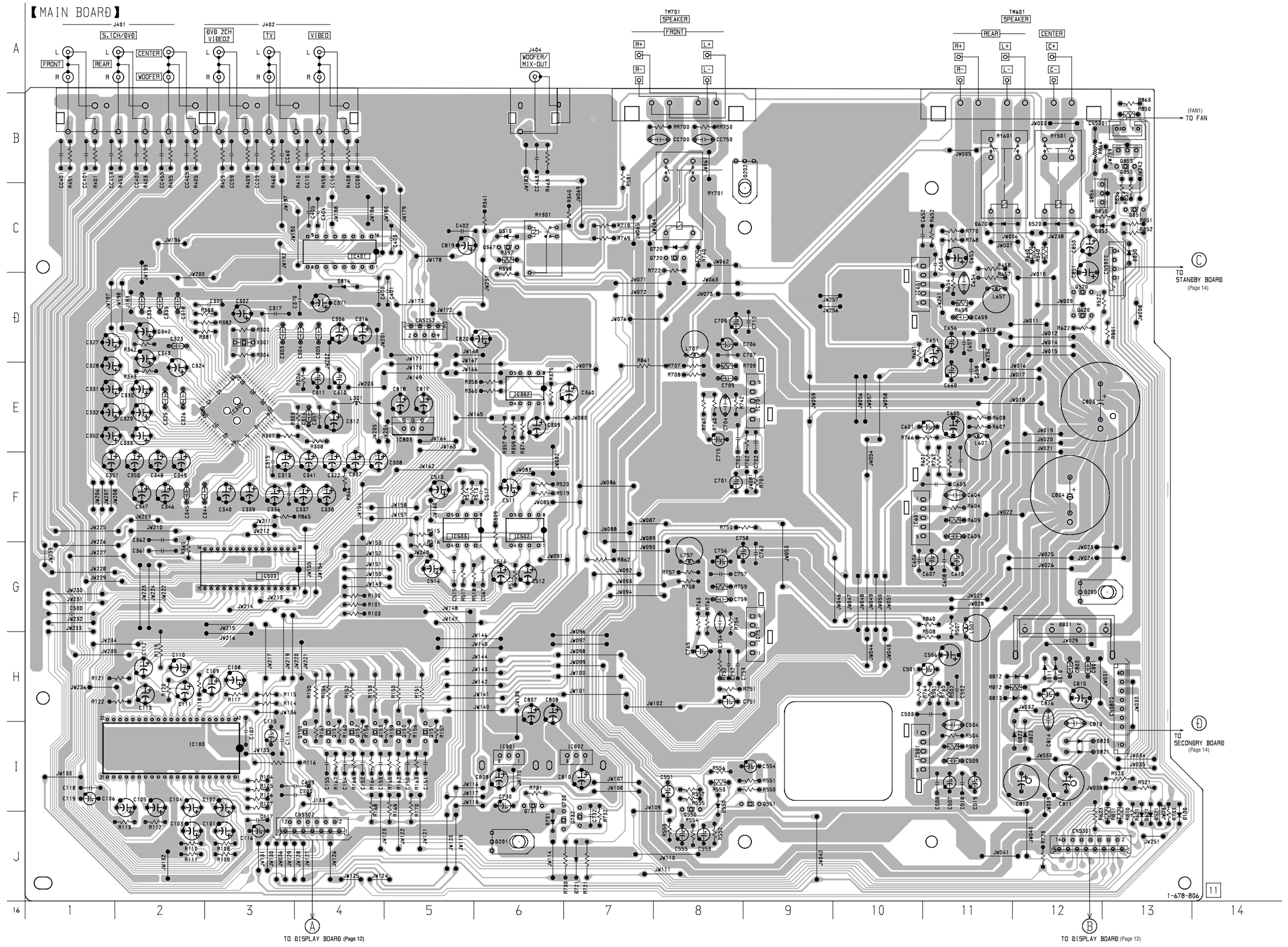
4-2. PRINTED WIRING BOARD – MAIN Section –

• See page 6 for Circuit Boards Location.

There are a few cases that the part printed on this diagram isn't mounted in this model.

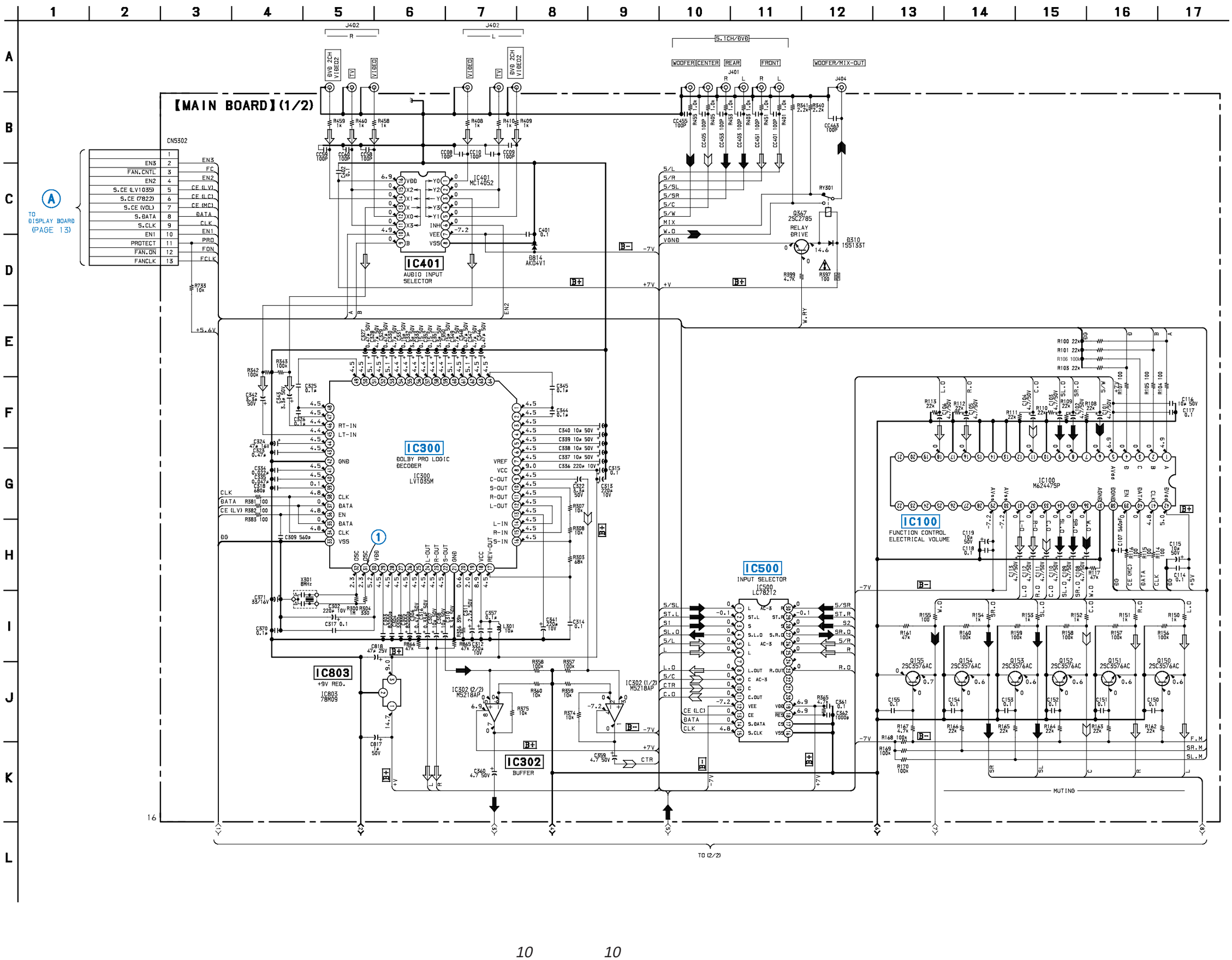
• **Semiconductor Location**

Ref. No.	Location
D100	J-13
D310	C-6
D520	C-12
D521	J-13
D550	I-8
D620	C-11
D621	J-13
D720	C-8
D721	J-7
D731	J-6
D801	G-12
D810	H-12
D811	H-12
D812	H-11
D813	H-11
D814	D-4
D820	I-12
D821	I-12
D822	I-12
D823	I-12
D850	C-13
D853	C-13
IC100	I-2
IC300	E-3
IC302	E-6
IC401	C-4
IC500	G-3
IC501	I-10
IC502	F-6
IC503	F-5
IC601	F-10
IC651	D-10
IC701	E-9
IC751	H-9
IC801	I-6
IC802	I-7
IC803	E-5
Q150	I-5
Q151	I-5
Q152	I-4
Q153	I-4
Q154	I-4
Q155	I-4
Q367	C-6
Q520	D-12
Q550	I-8
Q551	I-9
Q620	D-12
Q720	C-8
Q730	I-7
Q731	I-6
Q732	J-7
Q851	C-13
Q853	B-13
Q854	C-12
Q855	B-13

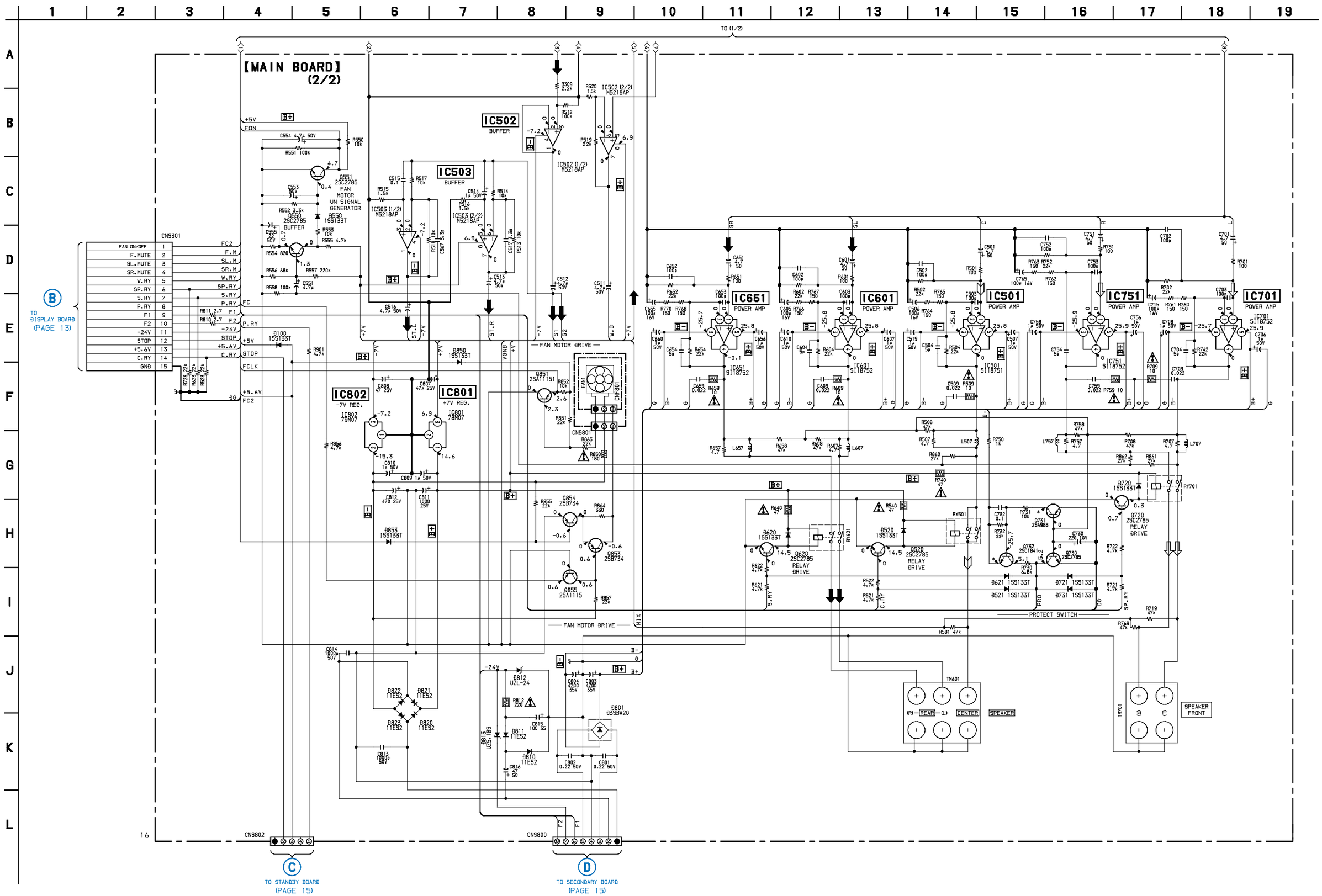


4-3. SCHEMATIC DIAGRAM – MAIN Section (1/2) –

• See page 6 for Waveform. • See page 7 for IC Block Diagrams.



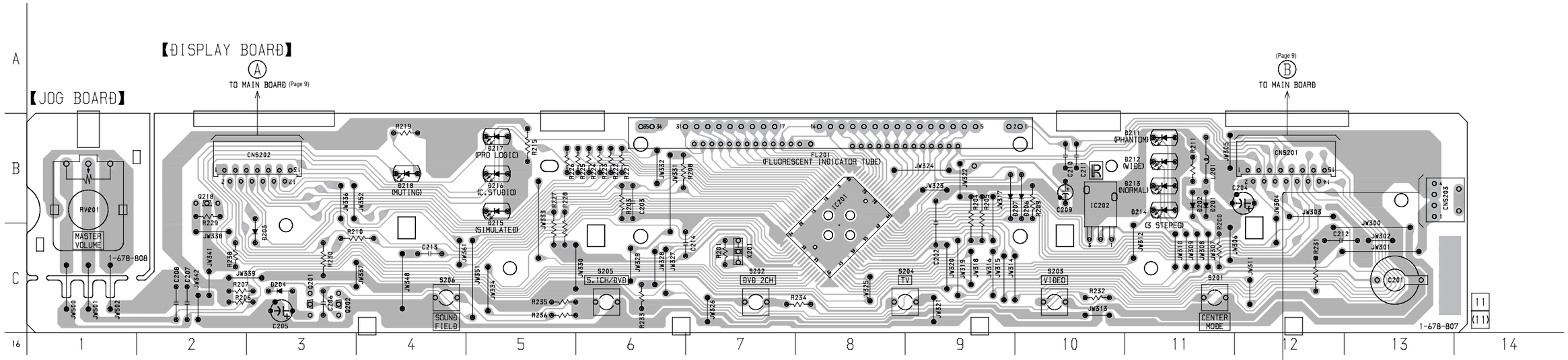
4-4. SCHEMATIC DIAGRAM – MAIN Section (2/2) –



4-5. PRINTED WIRING BOARDS – PANEL Section –

• See page 6 for Circuit Boards Location.

There are a few cases that the part printed on this diagram isn't mounted in this model.



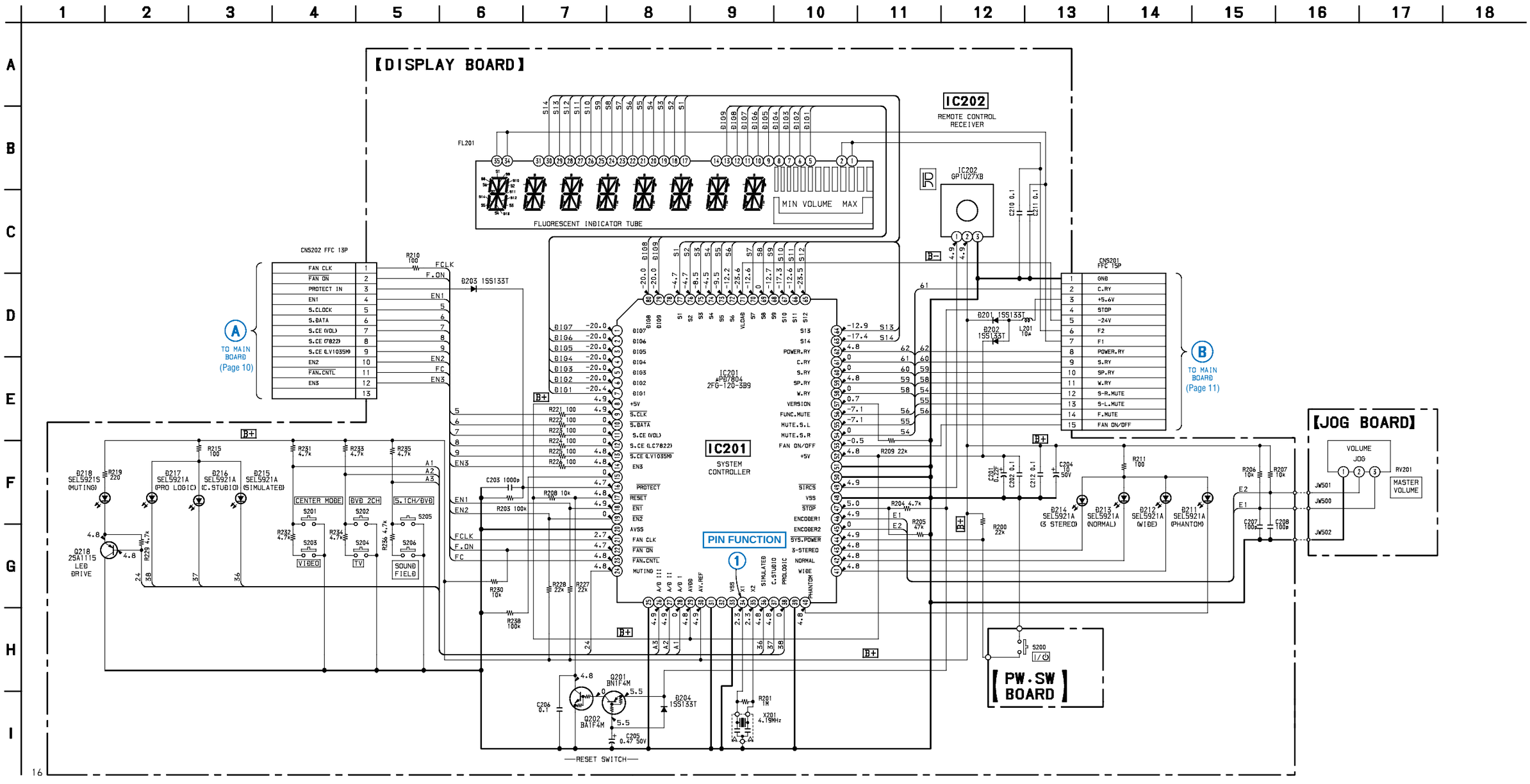
- **Semiconductor Location**

Ref. No.	Location
D201	B-11
D202	B-11
D203	C-3
D204	C-3
D211	B-11
D212	B-11
D213	B-11
D214	B-11
D215	B-5
D216	B-5
D217	B-5
D218	B-4
IC201	C-8
IC202	B-10
Q201	C-3
Q202	C-3
Q218	B-2

4-6. SCHEMATIC DIAGRAM – PANEL Section –

• See page 6 for Waveform.

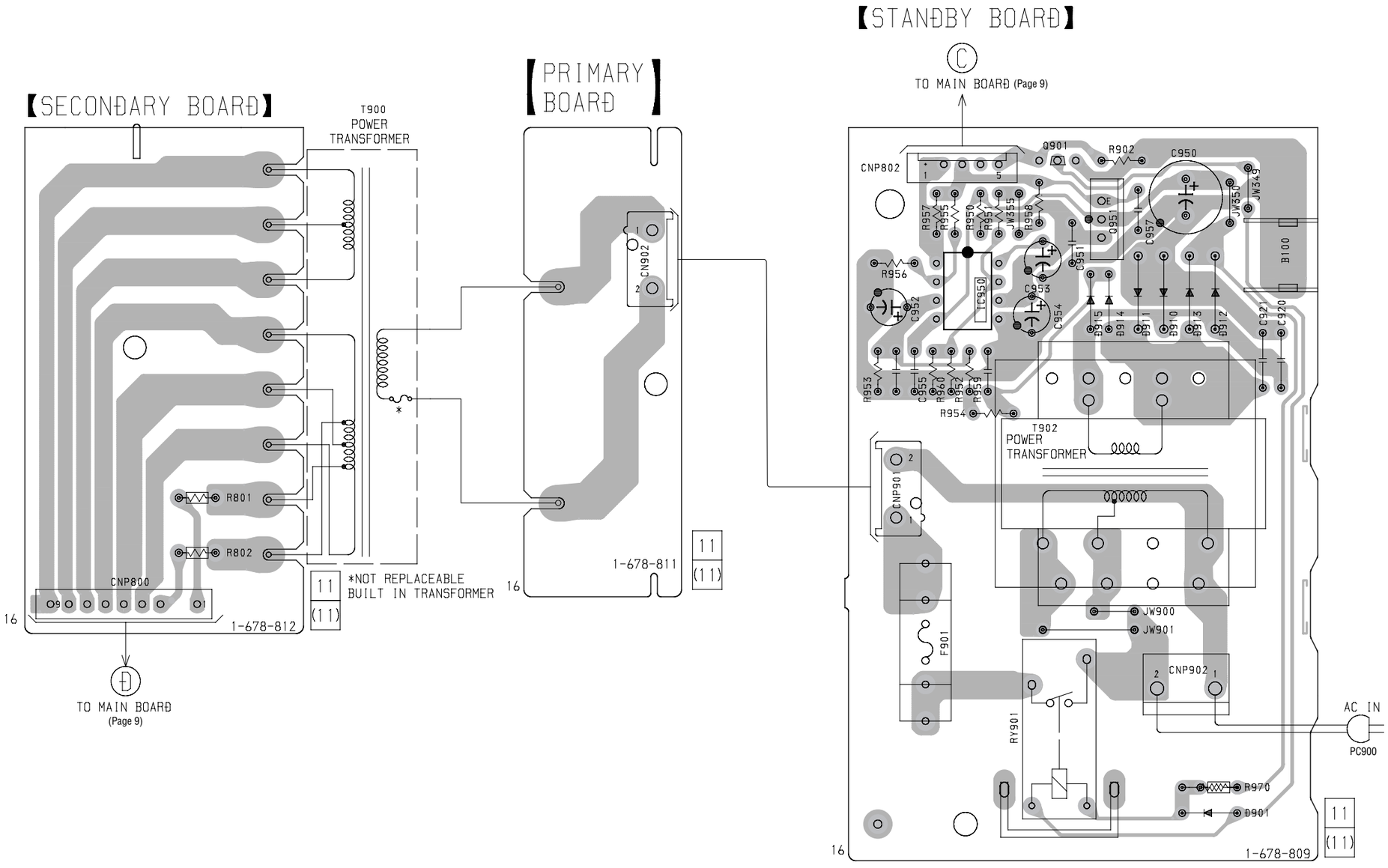
• See page 16 for IC Pin Function.



4-7. PRINTED WIRING BOARDS – POWER Section –

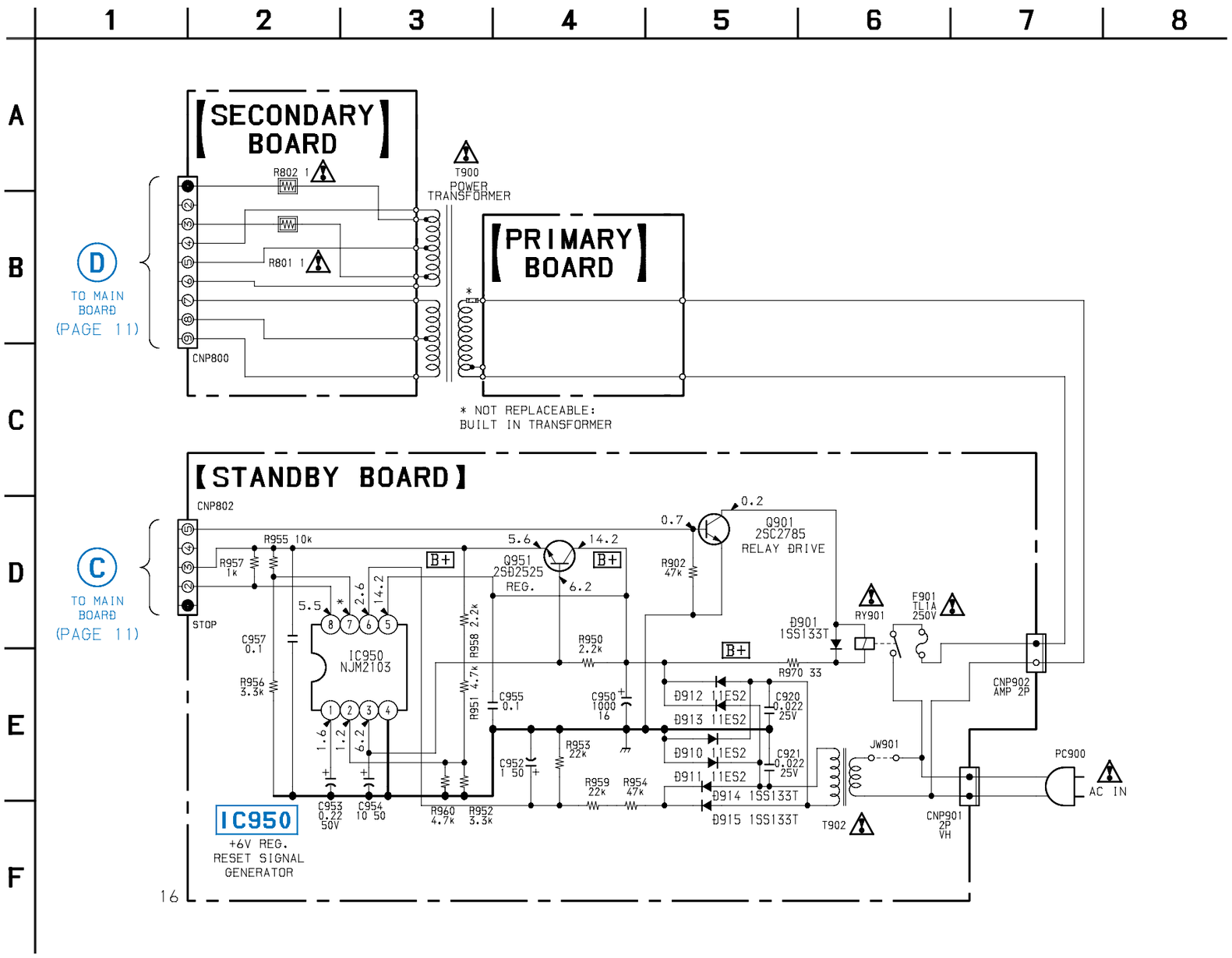
• See page 6 for Circuit Boards Location.

There are a few cases that the part printed on this diagram isn't mounted in this model.



4-8. SCHEMATIC DIAGRAM – POWER Section –

• See page 7 for IC Block Diagram.



4-9. IC PIN FUNCTION DESCRIPTION

• DISPLAY BOARD IC201 μPD78042FGF-120-3B9 (SYSTEM CONTROLLER, FL/LED DRIVER, KEY CONTROL)

Pin No.	Pin Name	I/O	Function
1 to 7	DIG7 to DIG1	O	Grid drive signal output to the fluorescent indicator tube (FL201)
8	VDD	—	Power supply terminal (+5V)
9	S. CLK	O	Serial data transfer clock signal output to the M62447SP (IC100), LV1035M (IC300) and LC78212 (IC500)
10	S. DATA	O	Serial data output to the M62447SP (IC100), LV1035M (IC300) and LC78212 (IC500)
11	S. CE (VOL)	O	Chip enable signal output to the M62447SP (IC100) "H" active
12	S. CE (LC7822)	O	Chip enable signal output to the LC78212 (IC500) "H" active
13	S. CE (LV1035M)	O	Chip enable signal output to the LV1035M (IC300) "H" active
14	EN3	O	Enable signal output terminal "L" active
15	—	I	Not used
16	PROTECT	I	Overload protection input terminal
17	RESET	I	System reset signal input from the reset signal generator circuit "L": reset For several hundreds msec. after the power supply rises, "L" is input, then it changes to "H"
18	EN1	O	Enable signal output to the function switch (IC402) "L" active
19	EN2	O	Enable signal output to the function switch (IC401) "L" active
20	AVSS	—	Ground terminal (for A/D converter)
21	FAN CLK	I	Fan motor clock signal input terminal
22	FAN ON	I	Fan on signal input for the fan motor drive
23	FAN. CNTL	O	Fan motor control signal output terminal "L": fan motor on (high speed) "H" : fan low speed
24	MUTING	O	LED drive signal output of the MUTING LED (D218) "H": LED on
25	—	I	Not used (open)
26	A/D III	I	Key input terminal (A/D input) S205, 206 (5.1 IN, SURROUND MODE keys input)
27	A/D II	I	Key input terminal (A/D input) S202, 204 (VIDEO, DVD keys input)
28	A/D I	I	Key input terminal (A/D input) S201, 203 (CENTER MODE, TV keys input)
29	AVDD	—	Power supply terminal (+5V) (for A/D converter)
30	AVREF	I	Reference voltage (+5V) input terminal (for A/D converter)
31	XT1	I	Sub system clock input terminal Not used (fixed at "L")
32	XT2	O	Sub system clock output terminal Not used (open)
33	VSS	—	Ground terminal
34	X1	I	Main system clock input terminal (4.19 MHz)
35	X2	O	Main system clock output terminal (4.19 MHz)
36	SIMULATED	O	LED drive signal output of the SIMULATED LED (D215) "L": LED on
37	C. STUDIO	O	LED drive signal output of the C.STUDIO LED (D216) "L": LED on
38	PROLOGIC	O	LED drive signal output of the PROLOGIC LED (D217) "L": LED on
39	—	I	Not used (fixed at "L")
40	PHANTOM	O	LED drive signal output of the PHANTOM LED (D211) "L": LED on
41	WIDE	O	LED drive signal output of the WIDE LED (D212) "L": LED on
42	NORMAL	O	LED drive signal output of the NORMAL LED (D213) "L": LED on
43	3-STEREO	O	LED drive signal output of the 3 STEREO LED (D214) "L": LED on
44	SYS. POWER	I	System power on/off switch (S200 I/⏻) input terminal
45	ENCODER 2	I	Jog dial pulse input from the rotary encoder (RV201 MASTER VOLUME)
46	ENCODER 1	I	Jog dial pulse input from the rotary encoder (RV201 MASTER VOLUME)
47	STOP	I	Power down detection signal input from the NJM2103D (IC950) "L": power down
48	VSS	—	Ground terminal
49	SIRCS	I	Sircs signal input from the remote control receiver (IC202)
50, 51	—	I	Not used (fixed at "L")
52	VDD	—	Power supply terminal (+5V)
53	FAN ON/OFF	O	Fan on/off control "L" : fan on "H" : fan stop
54	MUTE. S. R	O	Line muting on/off control signal output for the rear speaker right channel signal "H": muting on
55	MUTE. S. L	O	Line muting on/off control signal output for the rear speaker left channel signal "H": muting on
56	FUNC. MUTE	O	Line muting on/off control signal output for the front and center speakers signal "H": muting on
57	VERSION	I	Setting terminal for the version (fixed at "L" in this set)
58	W. RY	O	Woofer on/off relay drive signal output terminal "H": relay on
59	SP. RY	O	Front speaker on/off relay drive signal output terminal (for protect) "H": relay on
60	S. RY	O	Rear speaker on/off relay drive signal output terminal (for protect) "H": relay on
61	C. RY	O	Center speaker on/off relay drive signal output terminal (for protect) "H": relay on
62	POWER. RY	O	Power on/off relay drive signal output terminal "H": relay on (power on)
63 to 70	S14 to S7	O	Segment drive signal output to the fluorescent indicator tube (FL201)
71	VLOAD	—	Power supply terminal (–24V) (for FL drive)
72 to 77	S6 to S1	O	Segment drive signal output to the fluorescent indicator tube (FL201)
78	—	O	Not used (open)
79, 80	DIG9, DIG8	O	Grid drive signal output to the fluorescent indicator tube (FL201)

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SECTION 5
EXPLODED VIEWS

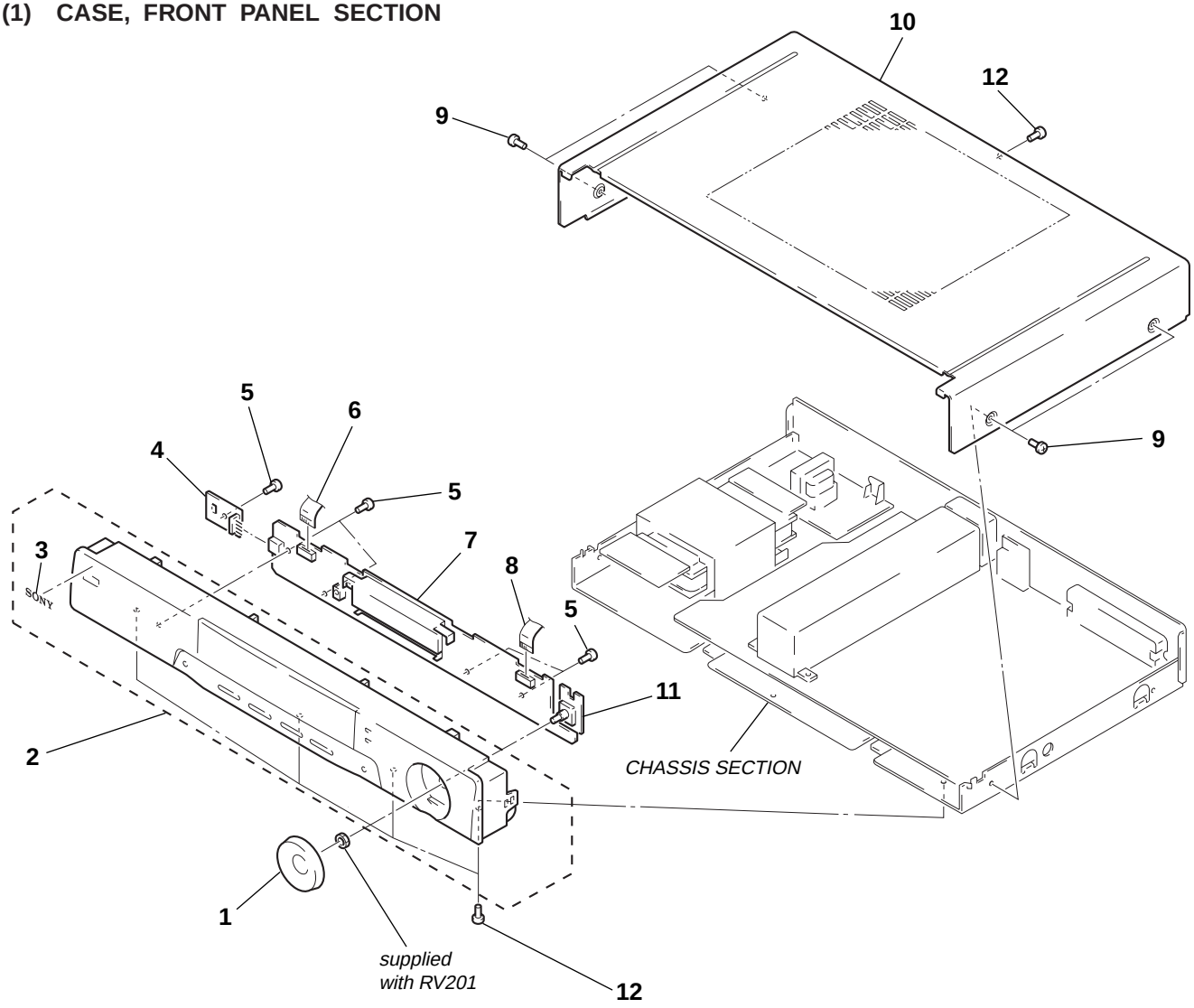
NOTE:

- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearance Parts
  Example:
  KNOB, BALANCE (WHITE) . . . (RED)
  ↑ ↑
  Parts Color Cabinet's Color
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Accessories and packing materials are given in the last of the electrical parts list.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

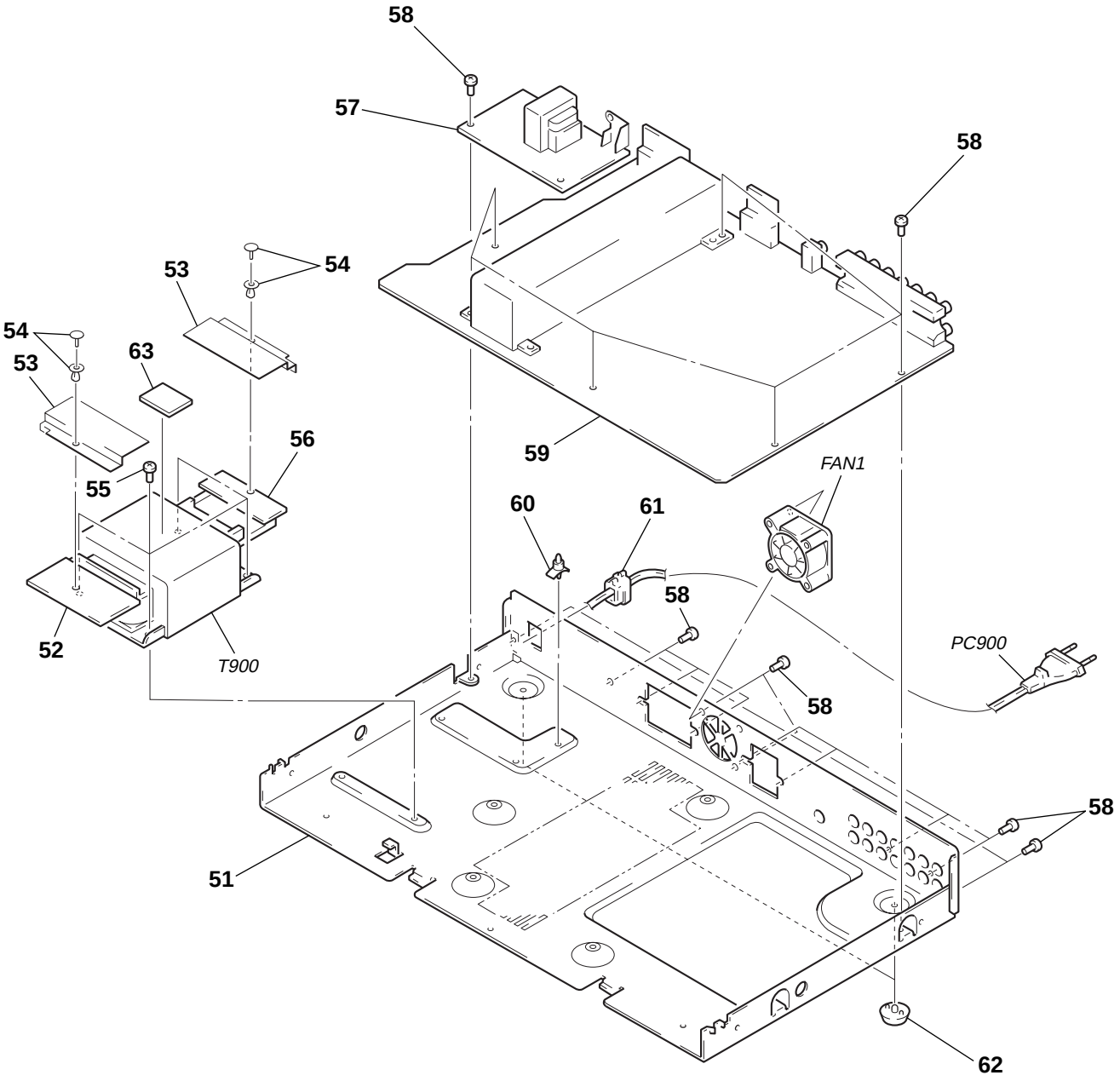
以阴影和⚠标志来识别的零部件在安全方面具有关键性。因此只能以规定号码的零部件来更换。

(1) CASE, FRONT PANEL SECTION



Ref. No.	Part No.	Description	Remark
1	4-211-178-01	KNOB (VOL) (BLACK)	
1	4-211-178-21	KNOB (VOL) (SILVER)	
2	X-4953-052-1	FRONT PANEL ASSY (BLACK)	
2	X-4953-053-1	FRONT PANEL ASSY (SILVER)	
3	3-008-600-11	EMBLEM (5-AR), SONY	
4	1-678-814-11	PW.SW BOARD	
5	4-951-620-01	SCREW(2.6X8), +BVTP	
6	1-777-353-11	WIRE(FLAT TYPE) (15 CORE)	
7	A-4473-758-A	DISPLAY BOARD,COMPLETE	
8	1-769-973-11	WIRE(FLAT TYPE) (13 CORE)	
9	3-710-901-11	SCREW, TAPPING (BLACK)	
9	4-210-291-11	SCREW (CASE 3 TP2)(SILVER)	
10	4-211-182-51	CASE (SILVER)	
* 10	4-211-182-01	CASE (BLACK)	
11	1-678-808-11	JOG BOARD	
12	7-685-646-79	SCREW +BVTP3X8 TYPE2 N-S	

(2) CHASSIS SECTION



The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	以阴影和 ⚠ 标志来识别的零部件，在安全方面具有关键性，因此只能以规定号码的零部件来更换。

Ref. No.	Part No.	Description	Remark
* 51	4-211-183-21	CHASSIS PANEL	
52	1-678-812-11	SECONDARY BOARD	
53	4-212-070-01	INSULATOR (PT)	
54	3-531-576-11	RIVET	
55	7-685-880-09	SCREW +BVTT4X6 (S)	
56	1-678-811-11	PRIMARY BOARD	
57	A-4473-760-A	STANDBY BOARD,COMPLETE	
58	7-685-646-79	SCREW +BVTP3X8 TYPE2 N-S	
59	A-4473-763-A	MAIN BOARD,COMPLETE	
* 60	4-924-098-21	HOLDER, PC BOARD	
* 61	3-703-244-00	BUSHING (2104), CORD	
62	4-965-822-01	FOOT	
63	4-214-557-11	CUSHION	
FAN1	1-763-137-11	FAN, DC	
⚠T900	1-431-979-11	TRANSFORMER, POWER	
⚠PC900	1-777-071-21	CORD, POWER	

SECTION 6
ELECTRICAL PARTS LIST

DISPLAY

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL: Metal-film resistor.
  METAL OXIDE: Metal oxide-film resistor.
  F: nonflammable
- Items marked "*" are not stocked since they are seldom required for routine service.
  Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u: µ, for example:
  uA. . : µA. . uPA. . : µPA. .
  uPB. . : µPB. . uPC. . : µPC. .
  uPD. . : µPD. .
- CAPACITORS
  uF: µF
- COILS
  uH: µH

When indicating parts by reference number, please include the board name.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

以阴影和⚠标志来识别的零部件在安全方面具有关键性。因此只能以规定号码的零部件来更换。

Ref. No.	Part No.	Description			Remark
	A-4473-758-A	DISPLAY BOARD, COMPLETE			
		**********			
*	4-921-941-01	CUSHION (FL)			
*	4-943-107-11	HOLDER (FL TUBE)			
		< CAPACITOR >			
C201	1-104-905-11	CAPACITOR	0.22F		5.5V
C202	1-164-159-11	CERAMIC	0.1uF		50V
C203	1-162-294-31	CERAMIC	0.001uF	10%	50V
C204	1-124-261-00	ELECT	10uF	20%	50V
C205	1-124-465-00	ELECT	0.47uF	20%	50V
C206	1-164-159-11	CERAMIC	0.1uF		50V
C207	1-162-282-31	CERAMIC	100PF	10%	50V
C208	1-162-282-31	CERAMIC	100PF	10%	50V
C210	1-164-159-11	CERAMIC	0.1uF		50V
C211	1-164-159-11	CERAMIC	0.1uF		50V
C212	1-164-159-11	CERAMIC	0.1uF		50V
		< CONNECTOR >			
* CNP203	1-565-295-11	PLUG, CONNECTOR 4P			
* CNS201	1-569-306-11	SOCKET, CONNECTOR (L TYPE) 15P			
CNS202	1-568-444-11	SOCKET, CONNECTOR 13P			
* CNS203	1-565-480-11	CONNECTOR, BOARD TO BOARD 4P			
CNS802	1-770-480-11	SOCKET, CONNECTOR PIN 4P			
		< DIODE >			
D201	8-719-911-19	DIODE 1SS133T-72			
D202	8-719-911-19	DIODE 1SS133T-72			
D203	8-719-911-19	DIODE 1SS133T-72			
D204	8-719-911-19	DIODE 1SS133T-72			
D211	8-719-046-36	DIODE SEL5921A-TP15 (PHANTOM)			
D212	8-719-046-36	DIODE SEL5921A-TP15 (WIDE)			
D213	8-719-046-36	DIODE SEL5921A-TP15 (NORMAL)			
D214	8-719-046-36	DIODE SEL5921A-TP15 (3 STEREO)			
D215	8-719-046-36	DIODE SEL5921A-TP15 (SIMULATED)			
D216	8-719-046-36	DIODE SEL5921A-TP15 (C. STUDIO)			
D217	8-719-046-36	DIODE SEL5921A-TP15 (PRO LOGIC)			
D218	8-719-046-36	DIODE SEL5921A-TP15 (MUTING)			
		< FILTER >			
FL201	1-517-786-11	INDICATOR TUBE, FLUORESCENT			
		< IC >			
IC201	8-759-683-98	IC uPD78042FGF-120-3B9			
IC202	8-759-332-18	IC GP1U27XB			

Ref. No.	Part No.	Description			Remark
		< COIL >			
L201	1-410-509-11	INDUCTOR	10uH		
		< TRANSISTOR >			
Q201	8-729-900-63	TRANSISTOR	BN1F4M-TP		
Q202	8-729-900-36	TRANSISTOR	BA1F4M-TP		
Q218	8-729-119-76	TRANSISTOR	2SA1115TP-F		
		< RESISTOR >			
R200	1-249-433-11	CARBON	22K	5%	1/4W
R201	1-247-903-00	CARBON	1M	5%	1/4W
R203	1-249-441-11	CARBON	100K	5%	1/4W
R204	1-249-425-11	CARBON	4.7K	5%	1/4W F
R205	1-249-437-11	CARBON	47K	5%	1/4W
R206	1-249-429-11	CARBON	10K	5%	1/4W
R207	1-249-429-11	CARBON	10K	5%	1/4W
R208	1-249-429-11	CARBON	10K	5%	1/4W
R209	1-249-433-11	CARBON	22K	5%	1/4W
R210	1-247-807-31	CARBON	100	5%	1/4W
R211	1-247-807-31	CARBON	100	5%	1/4W
R215	1-247-807-31	CARBON	100	5%	1/4W
R219	1-249-409-11	CARBON	220	5%	1/4W F
R221	1-247-807-31	CARBON	100	5%	1/4W
R222	1-247-807-31	CARBON	100	5%	1/4W
R223	1-247-807-31	CARBON	100	5%	1/4W
R224	1-247-807-31	CARBON	100	5%	1/4W
R225	1-247-807-31	CARBON	100	5%	1/4W
R226	1-247-807-31	CARBON	100	5%	1/4W
R227	1-249-433-11	CARBON	22K	5%	1/4W
R228	1-249-433-11	CARBON	22K	5%	1/4W
R229	1-249-425-11	CARBON	4.7K	5%	1/4W F
R230	1-249-429-11	CARBON	10K	5%	1/4W
R231	1-249-425-11	CARBON	4.7K	5%	1/4W F
R232	1-249-425-11	CARBON	4.7K	5%	1/4W F
R233	1-249-425-11	CARBON	4.7K	5%	1/4W F
R234	1-249-425-11	CARBON	4.7K	5%	1/4W F
R235	1-249-425-11	CARBON	4.7K	5%	1/4W F
R236	1-249-425-11	CARBON	4.7K	5%	1/4W F
R238	1-249-441-11	CARBON	100K	5%	1/4W
		< SWITCH >			
S201	1-762-875-21	SWITCH, KEYBOARD (CENTER MODE)			
S202	1-762-875-21	SWITCH, KEYBOARD (DVD 2CH)			
S203	1-762-875-21	SWITCH, KEYBOARD (VIDEO)			
S204	1-762-875-21	SWITCH, KEYBOARD (TV)			
S205	1-762-875-21	SWITCH, KEYBOARD (5.1CH/DVD)			

DISPLAY **JOG** **MAIN**

Ref. No.	Part No.	Description	Remarks
S206	1-762-875-21	SWITCH, KEYBOARD (SOUND FIELD)	
		< VIBRATOR >	
X201	1-577-101-11	VIBRATOR, CERAMIC (4.19MHz)	
**********			
	1-678-808-11	JOG BOARD	
		*********	
		< VARIABLE RESISTOR >	
RV201	1-475-886-11	ENCODER, ROTARY (MASTER VOLUME)	
**********			
	A-4473-763-A	MAIN BOARD, COMPLETE	
		**********	
	3-531-576-11	RIVET	
	7-685-647-79	SCREW +BVTP 3X10 TYPE2 N-S	
	7-685-872-09	SCREW +BVTT 3X8 (S)	
		< CAPACITOR >	

Ref. No.	Part No.	Description			Remarks
C101	1-126-163-11	ELECT	4.7uF	20%	50V
C102	1-126-163-11	ELECT	4.7uF	20%	50V
C103	1-126-163-11	ELECT	4.7uF	20%	50V
C104	1-126-163-11	ELECT	4.7uF	20%	50V
C105	1-126-163-11	ELECT	4.7uF	20%	50V
C106	1-126-163-11	ELECT	4.7uF	20%	50V
C107	1-162-291-31	CERAMIC	560PF	10.00%	50V
C108	1-126-163-11	ELECT	4.7uF	20%	50V
C109	1-126-163-11	ELECT	4.7uF	20%	50V
C110	1-126-163-11	ELECT	4.7uF	20%	50V
C111	1-126-163-11	ELECT	4.7uF	20%	50V
C112	1-126-163-11	ELECT	4.7uF	20%	50V
C113	1-126-163-11	ELECT	4.7uF	20%	50V
C114	1-164-159-11	CERAMIC	0.1uF		50V
C115	1-126-964-11	ELECT	10uF	20.00%	50V
C116	1-126-964-11	ELECT	10uF	20.00%	50V
C117	1-164-159-11	CERAMIC	0.1uF		50V
C118	1-164-159-11	CERAMIC	0.1uF		50V
C119	1-126-964-11	ELECT	10uF	20.00%	50V
C150	1-164-159-11	CERAMIC	0.1uF		50V
C151	1-164-159-11	CERAMIC	0.1uF		50V
C152	1-164-159-11	CERAMIC	0.1uF		50V
C153	1-164-159-11	CERAMIC	0.1uF		50V
C154	1-164-159-11	CERAMIC	0.1uF		50V
C155	1-164-159-11	CERAMIC	0.1uF		50V
C302	1-126-934-11	ELECT	220uF	20.00%	10V
C303	1-130-494-11	MYLAR	0.082uF	5%	50V
C304	1-137-367-11	MYLAR	0.0033uF	5.00%	50V
C305	1-130-494-11	MYLAR	0.082uF	5%	50V
C306	1-126-959-11	ELECT	0.47uF	20.00%	50V
C307	1-126-964-11	ELECT	10uF	20.00%	50V
C308	1-126-964-11	ELECT	10uF	20.00%	50V
C309	1-162-291-31	CERAMIC	560PF	10.00%	50V
C310	1-126-962-11	ELECT	3.3uF	20.00%	50V
C311	1-126-961-11	ELECT	2.2uF	20.00%	50V

Ref. No.	Part No.	Description			Remarks
C312	1-126-934-11	ELECT	220uF	20.00%	10V
C313	1-126-934-11	ELECT	220uF	20.00%	10V
C314	1-136-165-00	MYLAR	0.1uF	5.00%	50V
C315	1-164-159-11	CERAMIC	0.1uF		50V
C316	1-124-252-00	ELECT	0.33uF	20%	50V
C317	1-164-159-11	CERAMIC	0.1uF		50V
C318	1-136-357-11	MYLAR	680PF	5.00%	50V
C322	1-126-962-11	ELECT	3.3uF	20.00%	50V
C323	1-136-173-00	MYLAR	0.47uF	5.00%	50V
C324	1-104-664-11	ELECT	47uF	20.00%	16V
C325	1-136-165-00	MYLAR	0.1uF	5.00%	50V
C326	1-136-165-00	MYLAR	0.1uF	5.00%	50V
C327	1-126-959-11	ELECT	0.47uF	20.00%	50V
C328	1-126-163-11	ELECT	4.7uF	20%	50V
C329	1-126-959-11	ELECT	0.47uF	20.00%	50V
C330	1-126-163-11	ELECT	4.7uF	20%	50V
C331	1-124-250-11	ELECT	0.15uF	20.00%	50V
C332	1-126-962-11	ELECT	3.3uF	20.00%	50V
C333	1-124-250-11	ELECT	0.15uF	20.00%	50V
C334	1-137-372-11	MYLAR	0.022uF	5.00%	50V
C335	1-136-161-00	MYLAR	0.047uF	5.00%	50V
C336	1-126-934-11	ELECT	220uF	20.00%	10V
C337	1-126-964-11	ELECT	10uF	20.00%	50V
C338	1-126-964-11	ELECT	10uF	20.00%	50V
C339	1-126-964-11	ELECT	10uF	20.00%	50V
C340	1-126-964-11	ELECT	10uF	20.00%	50V
C341	1-126-934-11	ELECT	220uF	20.00%	10V
C342	1-126-962-11	ELECT	3.3uF	20.00%	50V
C343	1-126-962-11	ELECT	3.3uF	20.00%	50V
C344	1-136-165-00	MYLAR	0.1uF	5.00%	50V
C345	1-136-165-00	MYLAR	0.1uF	5.00%	50V
C346	1-126-959-11	ELECT	0.47uF	20.00%	50V
C347	1-126-163-11	ELECT	4.7uF	20%	50V
C348	1-126-959-11	ELECT	0.47uF	20.00%	50V
C349	1-126-163-11	ELECT	4.7uF	20%	50V
C350	1-124-250-11	ELECT	0.15uF	20.00%	50V
C351	1-126-962-11	ELECT	3.3uF	20.00%	50V
C352	1-124-250-11	ELECT	0.15uF	20.00%	50V
C357	1-164-159-11	CERAMIC	0.1uF		50V
C359	1-126-163-11	ELECT	4.7uF	20%	50V
C360	1-126-163-11	ELECT	4.7uF	20%	50V
C361	1-164-159-11	CERAMIC	0.1uF		50V
C362	1-162-294-31	CERAMIC	0.001uF	10%	50V
C370	1-164-159-11	CERAMIC	0.1uF		50V
C371	1-126-966-11	ELECT	33uF	20.00%	16V
C401	1-164-159-11	CERAMIC	0.1uF		50V
C402	1-164-159-11	CERAMIC	0.1uF		50V
C501	1-126-163-11	ELECT	4.7uF	20%	50V
C502	1-162-282-31	CERAMIC	100PF	10%	50V
C503	1-162-282-31	CERAMIC	100PF	10%	50V
C504	1-102-942-00	CERAMIC	5.0PF		50V
C506	1-104-665-11	ELECT	100uF	20.00%	16V
C507	1-126-160-11	ELECT	1uF	20%	50V
C509	1-137-372-11	MYLAR	0.022uF	5.00%	50V
C511	1-126-163-11	ELECT	4.7uF	20%	50V

Ref. No.	Part No.	Description			Remarks
C512	1-126-163-11	ELECT	4.7uF	20%	50V
C513	1-126-163-11	ELECT	4.7uF	20%	50V
C514	1-126-160-11	ELECT	1uF	20%	50V
C515	1-164-159-11	CERAMIC	0.1uF		50V
C516	1-126-163-11	ELECT	4.7uF	20%	50V
C517	1-162-193-31	CERAMIC	3.3PF	10.00%	50V
C519	1-126-160-11	ELECT	1uF	20%	50V
C551	1-126-163-11	ELECT	4.7uF	20%	50V
C553	1-126-160-11	ELECT	1uF	20%	50V
C554	1-126-163-11	ELECT	4.7uF	20%	50V
C555	1-126-514-11	ELECT	22uF	20.00%	10V
C567	1-162-193-31	CERAMIC	3.3PF	10.00%	50V
C601	1-126-163-11	ELECT	4.7uF	20%	50V
C602	1-162-282-31	CERAMIC	100PF	10%	50V
C603	1-162-282-31	CERAMIC	100PF	10%	50V
C604	1-102-942-00	CERAMIC	5.0PF		50V
C605	1-104-665-11	ELECT	100uF	20.00%	16V
C607	1-126-160-11	ELECT	1uF	20%	50V
C609	1-137-372-11	MYLAR	0.022uF	5.00%	50V
C610	1-126-160-11	ELECT	1uF	20%	50V
C651	1-126-163-11	ELECT	4.7uF	20%	50V
C652	1-162-282-31	CERAMIC	100PF	10%	50V
C653	1-162-282-31	CERAMIC	100PF	10%	50V
C654	1-102-942-00	CERAMIC	5.0PF		50V
C655	1-104-665-11	ELECT	100uF	20.00%	16V
C656	1-126-160-11	ELECT	1uF	20%	50V
C659	1-137-372-11	MYLAR	0.022uF	5.00%	50V
C660	1-126-160-11	ELECT	1uF	20%	50V
C701	1-126-163-11	ELECT	4.7uF	20%	50V
C702	1-162-282-31	CERAMIC	100PF	10%	50V
C703	1-162-282-31	CERAMIC	100PF	10%	50V
C704	1-102-942-00	CERAMIC	5.0PF		50V
C706	1-126-160-11	ELECT	1uF	20%	50V
C708	1-126-160-11	ELECT	1uF	20%	50V
C709	1-137-372-11	MYLAR	0.022uF	5.00%	50V
C715	1-104-665-11	ELECT	100uF	20.00%	16V
C730	1-126-934-11	ELECT	220uF	20.00%	10V
C732	1-164-159-11	CERAMIC	0.1uF		50V
C751	1-126-163-11	ELECT	4.7uF	20%	50V
C752	1-162-282-31	CERAMIC	100PF	10%	50V
C753	1-162-282-31	CERAMIC	100PF	10%	50V
C754	1-102-942-00	CERAMIC	5.0PF		50V
C756	1-126-160-11	ELECT	1uF	20%	50V
C758	1-126-160-11	ELECT	1uF	20%	50V
C759	1-137-372-11	MYLAR	0.022uF	5.00%	50V
C765	1-104-665-11	ELECT	100uF	20.00%	16V
C801	1-136-169-00	MYLAR	0.22uF	5.00%	50V
C802	1-136-169-00	MYLAR	0.22uF	5.00%	50V
C803	1-126-256-11	ELECT	4700uF	20.00%	35V
C804	1-126-256-11	ELECT	4700uF	20.00%	35V
C807	1-104-664-11	ELECT	47uF	20.00%	25V
C808	1-104-664-11	ELECT	47uF	20.00%	25V
C809	1-126-160-11	ELECT	1uF	20%	50V
C810	1-126-160-11	ELECT	1uF	20%	50V
C811	1-126-942-61	ELECT	1000uF	20.00%	25V
C812	1-126-941-11	ELECT	470uF	20.00%	25V
C813	1-101-001-00	CERAMIC	0.001uF		50V
C814	1-101-001-00	CERAMIC	0.001uF		50V
C815	1-126-948-11	ELECT	100uF	20.00%	35V
C816	1-126-967-11	ELECT	47uF	20.00%	50V
C817	1-126-160-11	ELECT	1uF	20%	50V
C818	1-104-664-11	ELECT	47uF	20.00%	25V
CC08	1-162-282-31	CERAMIC	100PF	10%	50V
CC09	1-162-282-31	CERAMIC	100PF	10%	50V
CC10	1-162-282-31	CERAMIC	100PF	10%	50V
CC58	1-162-282-31	CERAMIC	100PF	10%	50V
CC59	1-162-282-31	CERAMIC	100PF	10%	50V
CC60	1-162-282-31	CERAMIC	100PF	10%	50V
CC401	1-162-282-31	CERAMIC	100PF	10%	50V
CC403	1-162-282-31	CERAMIC	100PF	10%	50V
CC405	1-162-282-31	CERAMIC	100PF	10%	50V
CC451	1-162-282-31	CERAMIC	100PF	10%	50V
CC453	1-162-282-31	CERAMIC	100PF	10%	50V
CC455	1-162-282-31	CERAMIC	100PF	10%	50V
CC463	1-162-282-31	CERAMIC	100PF	10%	50V

< CONNECTOR >

CN801	1-779-978-11	PIN, CONNECTOR 3P
CNS301	1-569-321-11	SOCKET, CONNECTOR 15P
CNS302	1-568-443-11	SOCKET, CONNECTOR 13P
CNS800	1-691-770-11	PLUG (MICRO CONNECTOR) 8P
CNS802	1-770-479-11	PLUG,CONNECTOR PIN(PC BOARD)4P

< DIODE >

D100	8-719-911-19	DIODE 1SS133T-72
D310	8-719-911-19	DIODE 1SS133T-72
D520	8-719-911-19	DIODE 1SS133T-72
D521	8-719-911-19	DIODE 1SS133T-72
D550	8-719-911-19	DIODE 1SS133T-72
D620	8-719-911-19	DIODE 1SS133T-72
D621	8-719-911-19	DIODE 1SS133T-72
D710	8-719-911-19	DIODE 1SS133T-72
D720	8-719-911-19	DIODE 1SS133T-72
D721	8-719-911-19	DIODE 1SS133T-72
D731	8-719-911-19	DIODE 1SS133T-72
D801	8-719-028-23	DIODE D3SBA20-4101
D810	8-719-024-99	DIODE 11ES2-NTA2B
D811	8-719-024-99	DIODE 11ES2-NTA2B
D812	8-719-986-54	DIODE HZS24-1LTA
D813	8-719-109-85	DIODE MTZJ-T-72-5.1B
D814	8-719-043-76	DIODE AK04V1
D820	8-719-024-99	DIODE 11ES2-NTA2B
D821	8-719-024-99	DIODE 11ES2-NTA2B
D822	8-719-024-99	DIODE 11ES2-NTA2B
D823	8-719-024-99	DIODE 11ES2-NTA2B
D850	8-719-911-19	DIODE 1SS133T-72
D853	8-719-911-19	DIODE 1SS133T-72

< EARTH >

*	G200	1-537-738-21	TERMINAL, EARTH
*	G201	1-537-738-21	TERMINAL, EARTH
*	G202	1-537-738-21	TERMINAL, EARTH

< IC >

IC100	8-759-537-31	IC M62447SP
IC300	8-759-527-00	IC LV1035M
IC302	8-759-636-74	IC M5218AP-22
IC401	8-759-000-48	IC MC14052BCP
IC500	8-759-545-64	IC LC78212

MAIN

Ref. No.	Part No.	Description				Remarks
IC501	8-759-502-33	IC SI-18752				
IC502	8-759-636-74	IC M5218AP-22				
IC503	8-759-636-74	IC M5218AP-22				
IC601	8-759-502-33	IC SI-18752				
IC651	8-759-502-33	IC SI-18752				
IC701	8-759-502-33	IC SI-18752				
IC751	8-759-502-33	IC SI-18752				
IC801	8-759-605-00	IC M5F78M07L				
IC802	8-759-604-95	IC M5F79M07L				
IC803	8-759-701-59	IC M5F78M09L				
		< JACK >				
J401	1-779-381-11	JACK, PIN 6P (5.1CH/DVD)				
J402	1-691-887-11	JACK, PIN 6P (DVD 2CH VIDEO2/TV/VIDEO)				
J404	1-774-785-11	JACK, PIN 1P (WOOFER MIX-OUT)				
		< COIL >				
L301	1-410-509-11	INDUCTOR	10uH			
L507	1-420-872-00	COIL, AIR-CORE				
L607	1-420-872-00	COIL, AIR-CORE				
L657	1-420-872-00	COIL, AIR-CORE				
L707	1-420-872-00	COIL, AIR-CORE				
L757	1-420-872-00	COIL, AIR-CORE				
		< TRANSISTOR >				
Q150	8-729-823-22	TRANSISTOR	2SC3576-AC			
Q151	8-729-823-22	TRANSISTOR	2SC3576-AC			
Q152	8-729-823-22	TRANSISTOR	2SC3576-AC			
Q153	8-729-823-22	TRANSISTOR	2SC3576-AC			
Q154	8-729-823-22	TRANSISTOR	2SC3576-AC			
Q155	8-729-823-22	TRANSISTOR	2SC3576-AC			
Q367	8-729-119-78	TRANSISTOR	2SC2785TP-HFE			
Q520	8-729-119-78	TRANSISTOR	2SC2785TP-HFE			
Q550	8-729-119-78	TRANSISTOR	2SC2785TP-HFE			
Q551	8-729-119-78	TRANSISTOR	2SC2785TP-HFE			
Q620	8-729-119-78	TRANSISTOR	2SC2785TP-HFE			
Q720	8-729-119-78	TRANSISTOR	2SC2785TP-HFE			
Q730	8-729-119-78	TRANSISTOR	2SC2785TP-HFE			
Q731	8-729-140-82	TRANSISTOR	2SA988TP-PAFAEA			
Q732	8-729-140-84	TRANSISTOR	2SC1841TP-PAFAEA			
Q851	8-729-119-76	TRANSISTOR	2SA1115TP-F			
Q853	8-729-140-97	TRANSISTOR	2SB734-T-34			
Q854	8-729-140-97	TRANSISTOR	2SB734-T-34			
Q855	8-729-119-76	TRANSISTOR	2SA1115TP-F			
		< RESISTOR >				
R100	1-249-433-11	CARBON	22K	5%	1/4W	
R101	1-249-433-11	CARBON	22K	5%	1/4W	
R103	1-249-433-11	CARBON	22K	5%	1/4W	
R104	1-247-807-31	CARBON	100	5%	1/4W	
R105	1-247-807-31	CARBON	100	5%	1/4W	
R106	1-247-879-11	CARBON	100K	5%	1/4W	
R107	1-247-807-31	CARBON	100	5%	1/4W	
R108	1-249-433-11	CARBON	22K	5%	1/4W	
R109	1-249-433-11	CARBON	22K	5%	1/4W	
R110	1-249-433-11	CARBON	22K	5%	1/4W	

Ref. No.	Part No.	Description				Remarks
R111	1-249-433-11	CARBON	22K	5%	1/4W	
R112	1-249-433-11	CARBON	22K	5%	1/4W	
R113	1-249-433-11	CARBON	22K	5%	1/4W	
R114	1-247-807-31	CARBON	100	5%	1/4W	
R115	1-247-807-31	CARBON	100	5%	1/4W	
R116	1-247-807-31	CARBON	100	5%	1/4W	
R117	1-249-437-11	CARBON	47K	5%	1/4W	
R150	1-249-417-11	CARBON	1K	5%	1/4W	F
R151	1-249-417-11	CARBON	1K	5%	1/4W	F
R152	1-249-417-11	CARBON	1K	5%	1/4W	F
R153	1-249-417-11	CARBON	1K	5%	1/4W	F
R154	1-249-417-11	CARBON	1K	5%	1/4W	F
R155	1-247-807-31	CARBON	100	5%	1/4W	
R156	1-249-441-11	CARBON	100K	5%	1/4W	
R157	1-249-441-11	CARBON	100K	5%	1/4W	
R158	1-249-441-11	CARBON	100K	5%	1/4W	
R159	1-249-441-11	CARBON	100K	5%	1/4W	
R160	1-249-441-11	CARBON	100K	5%	1/4W	
R161	1-249-437-11	CARBON	47K	5%	1/4W	
R162	1-249-433-11	CARBON	22K	5%	1/4W	
R163	1-249-433-11	CARBON	22K	5%	1/4W	
R164	1-249-433-11	CARBON	22K	5%	1/4W	
R165	1-249-433-11	CARBON	22K	5%	1/4W	
R166	1-249-433-11	CARBON	22K	5%	1/4W	
R167	1-249-425-11	CARBON	4.7K	5%	1/4W	F
R168	1-249-441-11	CARBON	100K	5%	1/4W	
R169	1-249-441-11	CARBON	100K	5%	1/4W	
R170	1-249-441-11	CARBON	100K	5%	1/4W	
R300	1-247-903-00	CARBON	1M	5%	1/4W	
R303	1-249-439-11	CARBON	68K	5%	1/4W	
R304	1-249-411-11	CARBON	330	5%	1/4W	
R306	1-249-436-11	CARBON	39K	5%	1/4W	
R307	1-249-429-11	CARBON	10K	5%	1/4W	
R308	1-249-429-11	CARBON	10K	5%	1/4W	
R309	1-249-421-11	CARBON	2.2K	5%	1/4W	F
R340	1-249-421-11	CARBON	2.2K	5%	1/4W	F
R341	1-249-421-11	CARBON	2.2K	5%	1/4W	F
R342	1-249-441-11	CARBON	100K	5%	1/4W	
R343	1-249-441-11	CARBON	100K	5%	1/4W	
R357	1-249-441-11	CARBON	100K	5%	1/4W	
R358	1-249-441-11	CARBON	100K	5%	1/4W	
R359	1-249-429-11	CARBON	10K	5%	1/4W	
R360	1-249-429-11	CARBON	10K	5%	1/4W	
R365	1-249-425-11	CARBON	4.7K	5%	1/4W	F
R374	1-249-429-11	CARBON	10K	5%	1/4W	
R375	1-249-429-11	CARBON	10K	5%	1/4W	
R381	1-247-807-31	CARBON	100	5%	1/4W	
R382	1-247-807-31	CARBON	100	5%	1/4W	
R383	1-247-807-31	CARBON	100	5%	1/4W	
⚠R397	1-249-405-11	CARBON	100	5%	1/4W	F
R399	1-247-847-11	CARBON	4.7K	570	1/4W	
R401	1-249-417-11	CARBON	1K	5%	1/4W	F
R403	1-249-417-11	CARBON	1K	5%	1/4W	F
R405	1-249-417-11	CARBON	1K	5%	1/4W	F
R408	1-249-417-11	CARBON	1K	5%	1/4W	F

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Ref. No.	Part No.	Description			Remarks
R409	1-249-417-11	CARBON	1K	5%	1/4W F
R410	1-249-417-11	CARBON	1K	5%	1/4W F
R451	1-249-417-11	CARBON	1K	5%	1/4W F
R453	1-249-417-11	CARBON	1K	5%	1/4W F
R455	1-249-417-11	CARBON	1K	5%	1/4W F
R458	1-249-417-11	CARBON	1K	5%	1/4W F
R459	1-249-417-11	CARBON	1K	5%	1/4W F
R460	1-249-417-11	CARBON	1K	5%	1/4W F
R501	1-247-807-31	CARBON	100	5%	1/4W
R502	1-249-433-11	CARBON	22K	5%	1/4W
R504	1-249-433-11	CARBON	22K	5%	1/4W
R507	1-249-389-11	CARBON	4.7	5%	1/4W F
R508	1-249-437-11	CARBON	47K	5%	1/4W
⚠R509	1-249-393-11	CARBON	10	5%	1/4W F
R512	1-249-441-11	CARBON	100K	5%	1/4W
R513	1-249-429-11	CARBON	10K	5%	1/4W
R514	1-249-429-11	CARBON	10K	5%	1/4W
R515	1-249-419-11	CARBON	1.5K	5%	1/4W F
R516	1-249-419-11	CARBON	1.5K	5%	1/4W F
R517	1-249-429-11	CARBON	10K	5%	1/4W
R518	1-249-429-11	CARBON	10K	5%	1/4W
R519	1-249-863-11	CARBON	22K	5%	1/4W F
R520	1-249-835-11	CARBON	1.5K	5%	1/4W F
R521	1-249-425-11	CARBON	4.7K	5%	1/4W F
R522	1-249-425-11	CARBON	4.7K	5%	1/4W F
R523	1-249-433-11	CARBON	22K	5%	1/4W
⚠R540	1-249-401-11	CARBON	47	5%	1/4W F
R550	1-249-429-11	CARBON	10K	5%	1/4W
R551	1-249-441-11	CARBON	100K	5%	1/4W
R552	1-247-843-11	CARBON	3.3K	5%	1/4W
R553	1-249-429-11	CARBON	10K	5%	1/4W
R554	1-249-416-11	CARBON	820	5%	1/4W F
R555	1-249-425-11	CARBON	4.7K	5%	1/4W F
R556	1-249-439-11	CARBON	68K	5%	1/4W
R557	1-247-887-00	CARBON	220K	5%	1/4W
R558	1-249-441-11	CARBON	100K	5%	1/4W
R581	1-249-437-11	CARBON	47K	5%	1/4W
R599	1-249-425-11	CARBON	4.7K	5%	1/4W F
R601	1-247-807-31	CARBON	100	5%	1/4W
R602	1-249-433-11	CARBON	22K	5%	1/4W
R604	1-249-433-11	CARBON	22K	5%	1/4W
R607	1-249-389-11	CARBON	4.7	5%	1/4W F
R608	1-249-437-11	CARBON	47K	5%	1/4W
⚠R609	1-249-393-11	CARBON	10	5%	1/4W F
R621	1-249-425-11	CARBON	4.7K	5%	1/4W F
R622	1-249-425-11	CARBON	4.7K	5%	1/4W F
R623	1-249-433-11	CARBON	22K	5%	1/4W
⚠R640	1-249-401-11	CARBON	47	5%	1/4W F
R651	1-247-807-31	CARBON	100	5%	1/4W
R652	1-249-433-11	CARBON	22K	5%	1/4W
R654	1-249-433-11	CARBON	22K	5%	1/4W
R657	1-249-389-11	CARBON	4.7	5%	1/4W F
R658	1-249-437-11	CARBON	47K	5%	1/4W
⚠R659	1-249-393-11	CARBON	10	5%	1/4W F
R701	1-247-807-31	CARBON	100	5%	1/4W

Ref. No.	Part No.	Description			Remarks
R702	1-249-433-11	CARBON	22K	5%	1/4W
R707	1-249-389-11	CARBON	4.7	5%	1/4W F
R708	1-249-437-11	CARBON	47K	5%	1/4W
⚠R709	1-249-393-11	CARBON	10	5%	1/4W F
R719	1-249-437-11	CARBON	47K	5%	1/4W
R721	1-249-425-11	CARBON	4.7K	5%	1/4W F
R722	1-249-425-11	CARBON	4.7K	5%	1/4W F
R723	1-249-433-11	CARBON	22K	5%	1/4W
R730	1-249-427-11	CARBON	6.8K	5%	1/4W F
R731	1-249-429-11	CARBON	10K	5%	1/4W
R732	1-249-435-11	CARBON	33K	5%	1/4W
R733	1-249-429-11	CARBON	10K	5%	1/4W
⚠R740	1-249-401-11	CARBON	47	5%	1/4W F
R742	1-249-433-11	CARBON	22K	5%	1/4W
R750	1-249-417-11	CARBON	1K	5%	1/4W F
R751	1-247-807-31	CARBON	100	5%	1/4W
R752	1-249-433-11	CARBON	22K	5%	1/4W
R754	1-249-433-11	CARBON	22K	5%	1/4W
R757	1-249-389-11	CARBON	4.7	5%	1/4W F
R758	1-249-437-11	CARBON	47K	5%	1/4W
⚠R759	1-249-393-11	CARBON	10	5%	1/4W F
R760	1-249-407-11	CARBON	150	5%	1/4W F
R761	1-249-407-11	CARBON	150	5%	1/4W F
R762	1-249-407-11	CARBON	150	5%	1/4W F
R763	1-249-407-11	CARBON	150	5%	1/4W F
R764	1-249-407-11	CARBON	150	5%	1/4W F
R765	1-249-407-11	CARBON	150	5%	1/4W F
R766	1-249-407-11	CARBON	150	5%	1/4W F
R767	1-249-407-11	CARBON	150	5%	1/4W F
R768	1-249-407-11	CARBON	150	5%	1/4W F
R769	1-249-437-11	CARBON	47K	5%	1/4W
R770	1-249-407-11	CARBON	150	5%	1/4W F
R810	1-249-386-11	CARBON	2.7	5%	1/6W F
R811	1-249-386-11	CARBON	2.7	5%	1/6W F
⚠R812	1-249-409-11	CARBON	220	5%	1/4W F
⚠R850	1-249-408-11	CARBON	180	5%	1/4W F
R851	1-249-433-11	CARBON	22K	5%	1/4W
R852	1-249-429-11	CARBON	10K	5%	1/4W
R855	1-249-433-11	CARBON	22K	5%	1/4W
R856	1-249-425-11	CARBON	4.7K	5%	1/4W F
R857	1-249-433-11	CARBON	22K	5%	1/4W
R860	1-249-434-11	CARBON	27K	5%	1/4W
R861	1-249-434-11	CARBON	27K	5%	1/4W
R862	1-249-434-11	CARBON	27K	5%	1/4W
R863	1-249-433-11	CARBON	22K	5%	1/4W
R864	1-215-866-11	METAL OXIDE	330	5%	1W
R865	1-249-437-11	CARBON	47K	5%	1/4W
R866	1-249-437-11	CARBON	47K	5%	1/4W
R901	1-249-425-11	CARBON	4.7K	5%	1/4W F

< RELAY >

RY301	1-755-267-11	RELAY
RY501	1-755-170-11	RELAY (12V)
RY601	1-755-170-11	RELAY (12V)
RY701	1-755-170-11	RELAY (12V)

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MAIN **PRIMARY** **PW.SW** **SECONDARY** **STANDBY**

Ref. No.	Part No.	Description				Remarks
		< TERMINAL >				
TM601	1-537-510-11	TERMINAL BOARD (SPEAKER)(6P)(SPEAKER REAR/CENTER)				
TM701	1-537-240-11	TERMINAL BOARD (CHECKER PIN)(SPEAKER FRONT)				
		< VIBRATOR >				
X301	1-579-952-21	VIBRATOR, CERAMIC (8MHz)				
**********						
	1-678-811-11	PRIMARY BOARD				
		**********				
**********						
	1-678-814-11	PW.SW BOARD				
		**********				
		< SWITCH >				
S200	1-762-875-21	SWITCH, KEYBOARD (**I**/⏻)				
**********						
	1-678-812-11	SECONDARY BOARD				
		**********				
		< RESISTOR >				
⚠R801	1-249-381-11	CARBON	1	5%	1/4W	F
⚠R802	1-249-381-11	CARBON	1	5%	1/4W	F
**********						
	A-4473-760-A	STANDBY BOARD, COMPLETE				
		**********				
	1-533-293-11	FUSE HOLDER				
		< CAPACITOR >				
C920	1-161-494-00	CERAMIC	0.022uF		25V	
C921	1-161-494-00	CERAMIC	0.022uF		25V	
C950	1-126-767-11	ELECT	1000uF	20.00%	16V	
C951	1-164-159-11	CERAMIC	0.1uF		50V	
C952	1-126-960-11	ELECT	1uF	20.00%	50V	
C953	1-124-464-11	ELECT	0.22uF	20%	50V	
C954	1-126-964-11	ELECT	10uF	20.00%	50V	
C955	1-164-159-11	CERAMIC	0.1uF		50V	
C957	1-164-159-11	CERAMIC	0.1uF		50V	
		< CONNECTOR >				
CNP902	1-564-321-00	PIN, CONNECTOR 2P				
		< DIODE >				
D901	8-719-911-19	DIODE 1SS133T-72				
D910	8-719-024-99	DIODE 11ES2-NTA2B				
D911	8-719-024-99	DIODE 11ES2-NTA2B				
D912	8-719-024-99	DIODE 11ES2-NTA2B				
D913	8-719-024-99	DIODE 11ES2-NTA2B				

Ref. No.	Part No.	Description				Remarks
D914	8-719-911-19	DIODE 1SS133T-72				
D915	8-719-911-19	DIODE 1SS133T-72				
		< FUSE >				
⚠F901	1-532-463-51	FUSE. TIME LAG 1A/250V				
		< IC >				
IC950	8-759-333-83	IC NJM2103D				
		< TRANSISTOR >				
Q901	8-729-119-78	TRANSISTOR	2SC2785TP-HFE			
Q951	8-729-026-68	TRANSISTOR	2SD2525(TP)			
		< RESISTOR >				
R902	1-249-437-11	CARBON	47K	5%	1/4W	
R950	1-249-421-11	CARBON	2.2K	5%	1/4W	F
R951	1-249-425-11	CARBON	4.7K	5%	1/4W	F
R952	1-247-843-11	CARBON	3.3K	5%	1/4W	
R953	1-249-433-11	CARBON	22K	5%	1/4W	
R954	1-249-437-11	CARBON	47K	5%	1/4W	
R955	1-249-429-11	CARBON	10K	5%	1/4W	
R956	1-247-843-11	CARBON	3.3K	5%	1/4W	
R957	1-249-417-11	CARBON	1K	5%	1/4W	F
R958	1-249-421-11	CARBON	2.2K	5%	1/4W	F
R959	1-249-433-11	CARBON	22K	5%	1/4W	
R960	1-249-425-11	CARBON	4.7K	5%	1/4W	F
R970	1-249-399-11	CARBON	33	5%	1/4W	F
		< RELAY >				
⚠RY901	1-755-198-11	RELAY				
		< TRANSFORMER >				
⚠T902	1-431-739-11	TRANSFORMER, POWER				
**********						
		MISCELLANEOUS				
		**********				
6	1-777-353-11	WIRE (FLAT TYPE) (15 CORE)				
8	1-769-973-11	WIRE (FLAT TYPE) (13 CORE)				
FAN1	1-763-137-11	FAN, DC				
⚠T900	1-431-979-11	TRANSFORMER, POWER				
⚠PC900	1-777-071-21	CORD, POWER				
**********						
		ACCESSORIES & PACKING MATERIALS				
		**********				
⚠	1-770-019-11	ADAPTOR, CONVERSION PLUG 3P (UK,HK)				

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	以阴影和 ⚠ 标志来识别的零部件，在安全方面具有关键性，因此只能以规定号码的零部件来更换。

Sony Corporation
Audio Entertainment Group

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SA-VE215/WMS215/ SS-MS215

SERVICE MANUAL

AEP Model
UK Model
E Model
Australian Model
Chinese Model

- This set is the Speaker section in HT-K170/ K215.
- The SA-VE215 system consists of one unit of SA-WMS215 and five units of SS-MS215.

Photo: SA-WMS215

Photo: SS-MS215

SPECIFICATIONS

SS-MS215 Front, center and rear speakers

Speaker system	Full range, magnetically shielded
Speaker units	5 cm cone type
Enclosure type	Bass reflex
Rated impedance	8 ohms
Power handling capacity (Maximum input power)	60 watts
Sensitivity level	84 dB (1W, 1m)
Frequency range	150 Hz - 20,000 Hz
Dimensions (w/h/d)	Approx. 76 × 100 × 86 mm including front grille
Mass	Approx. 425 g

SA-WMS215 Subwoofer

System Speaker system	Active subwoofer, magnetically shielded
Speaker unit	Woofer : 16 cm cone type
Enclosure type	Acoustically Loaded Bass Reflex
Continuous RMS power output (8 ohms, 20 - 250 Hz)	50 W
Reproduction frequency range	32 Hz - 250 Hz
High frequency cut-off frequency	250 Hz

Input

LINE IN (input pin jack)

General

Power requirements	220 - 230 V AC, 50/60 Hz
Power consumptions	45 W
Dimensions (w/h/d)	Approx. 240 × 285 × 355 mm including front panel
Mass	Approx. 8 kg

Design and specifications are subject to change without notice

SPEAKER SYSTEM

SONY®

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

与安全有关的零部件须知

在原理图上用阴影及 ⚠ 标记来识别的零部件在安全操作上是具有关键性的。这些零部件要用本手册中所示的部件号对应的索尼零部件进行更换。

在安全操作上具有关键性的电路调整与索尼公司出版的维修手册完全一致。在更换关键零部件时或怀疑动作失常时，请进行这些调整操作。

Flexible Circuit Board Repairing

- Keep the temperature of soldering iron around 270˚C during repairing.
- Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
- Be careful not to apply force on the conductor when soldering or unsoldering.

Notes on chip component replacement

- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

SECTION 1
DIAGRAMS

1-1. NOTE FOR PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

Note on Printed Wiring Board:

- ⟷ : parts extracted from the component side.
- ▒▒▒ : Pattern from the side which enables seeing.
- Indication of transistor.

These are omitted.

Note on Schematic Diagram:

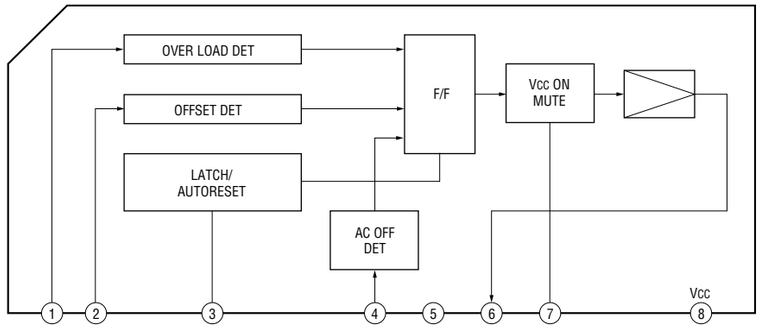
- All capacitors are in µF unless otherwise noted. pF: µµF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- : nonflammable resistor.
- : panel designation.

Note : The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	以阴影和 ⚠ 标志来识别的零部件，在安全方面具有关键性，因此只能以规定号码的零部件来更换。

- **B+** : B+ Line.
- **B−** : B– Line.
- Voltages are dc with respect to ground under no-signal conditions.
- Voltages are taken with a VOM (input impedance 10 MΩ). Voltage variations may be noted due to normal production tolerances.
- Signal path.
  ⇨ : AUDIO

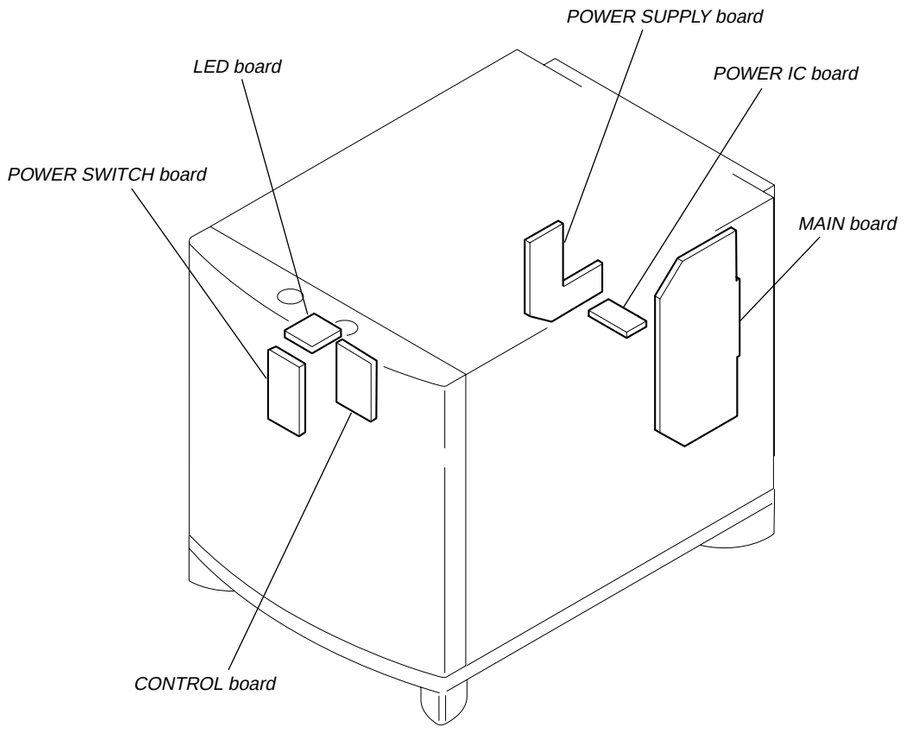
- **IC Block Diagram**

IC302 uPC1237HA

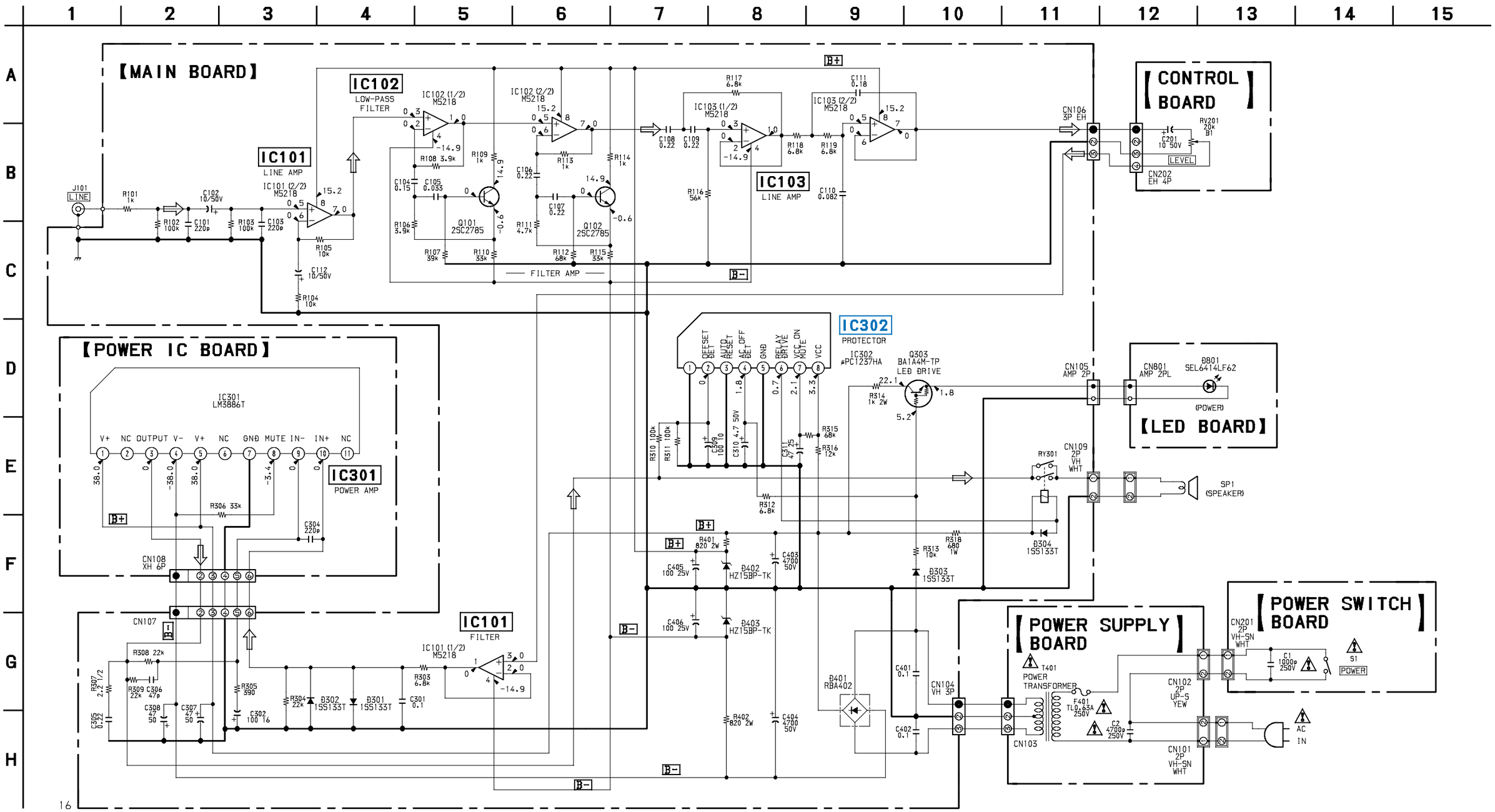


- **Circuit Boards Location**

SA-WMS215



1-2. SCHEMATIC DIAGRAM (SA-WMS215) • See page 3 for IC block diagram.

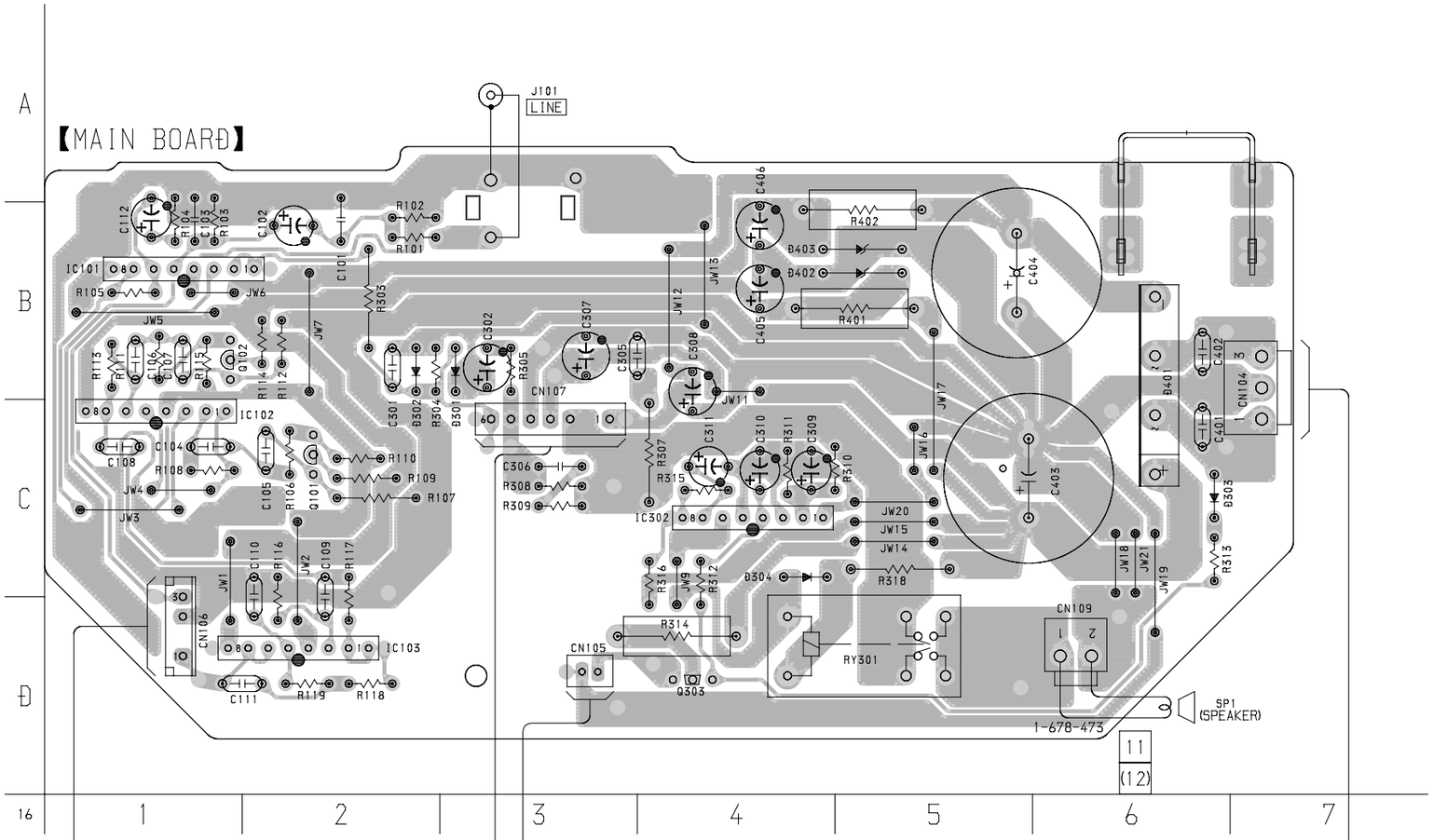


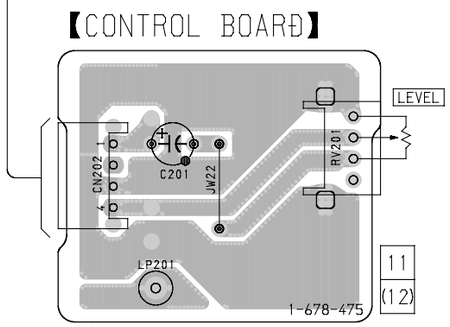
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	以阴影和 ⚠ 标志来识别的零部件，在安全方面具有关键性，因此只能以规定号码的零部件来更换。

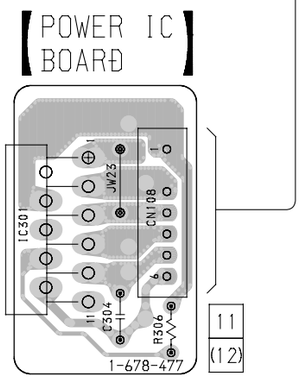
1-3. PRINTED WIRING BOARD (SA-WMS215)

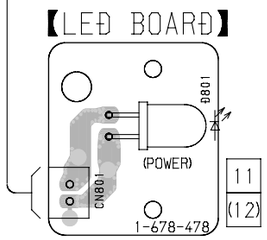
• See page 3 for Circuit Boards Location.

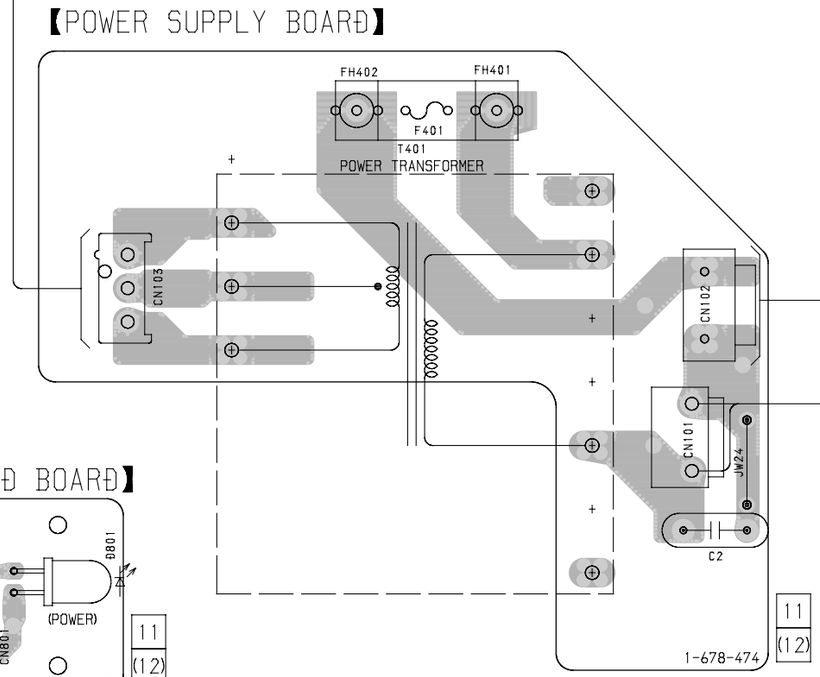
There are a few cases that the part printed on this diagram isn't mounted in this model.

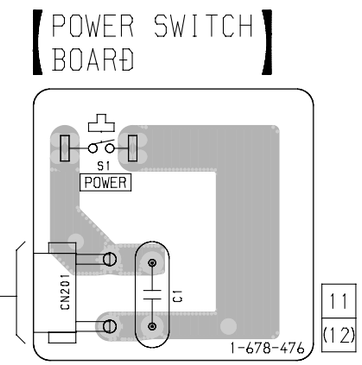












• **Semiconductor Location**

Ref. No.	Location
D301	B-3
D302	B-2
D303	C-6
D304	C-4
D401	B-6
D402	B-4
D403	B-4
IC101	B-1
IC102	C-1
IC103	D-2
IC302	C-4
Q101	C-2
Q102	B-2
Q303	D-4

SECTION 2
EXPLODED VIEWS

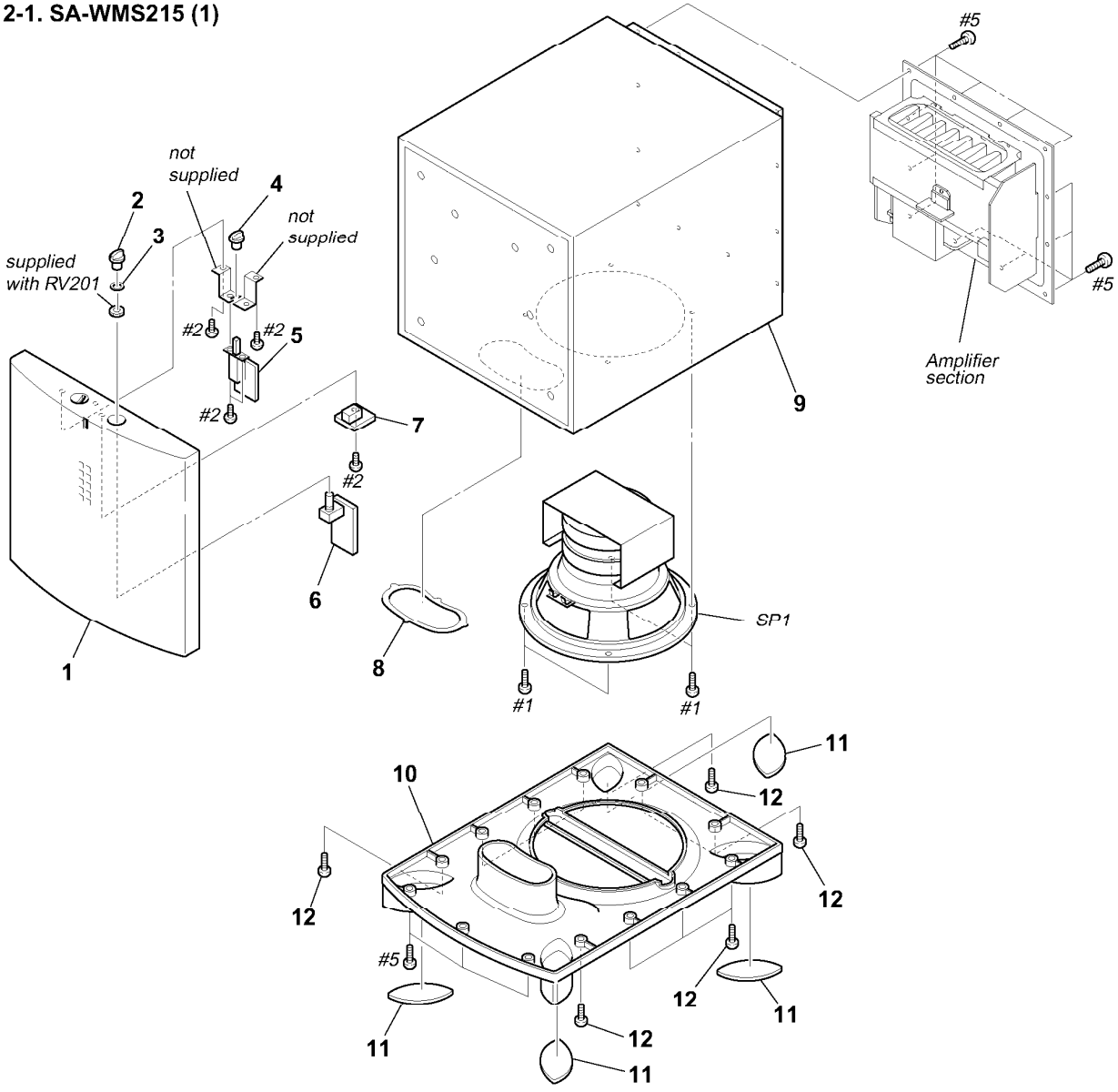
NOTE:

- -XX, -X mean standardized parts, so they may have some differences from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Accessories and packing materials are given in the last of this parts list.
- Abbreviation
  EE : East European model.
  AUS : Australian model.
  CH : Chinese model.
  HK : Hong Kong model.
  MY : Malaysia model.
  SP : Singapore model.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

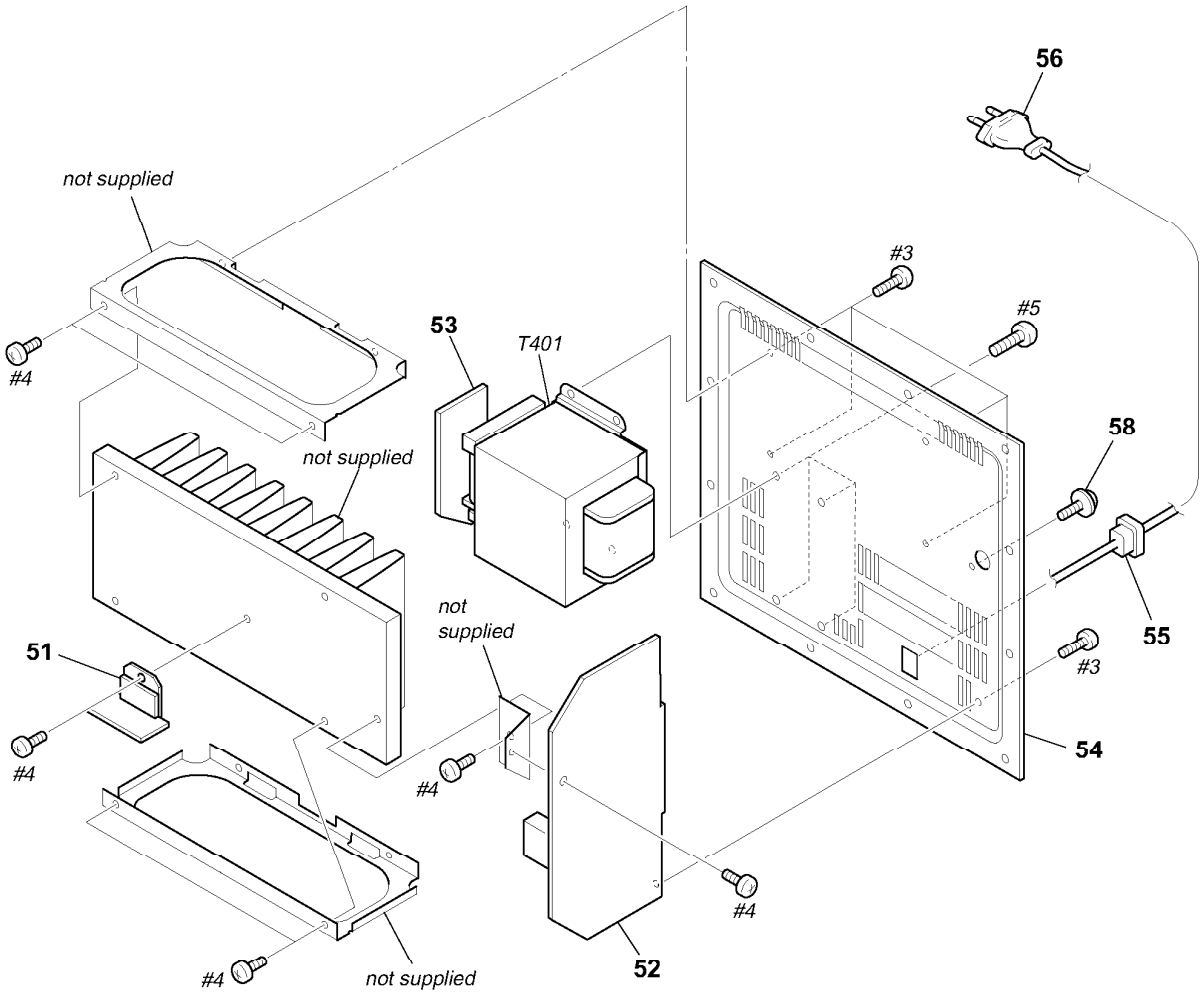
以阴影和⚠标志来识别的零部件在安全方面具有关键性。因此只能以规定号码的零部件来更换。

2-1. SA-WMS215 (1)



Ref. No.	Part No.	Description	Remarks
1	A-4412-320-A	PANELASSY, FRONT	
2	4-229-516-01	KNOB (VOL)	
3	4-220-465-01	WASHER, INSULATING	
4	4-229-517-01	KNOB (SW)	
5	1-678-476-11	POWER SWITCH BOARD	
6	1-678-475-11	CONTROL BOARD	
7	1-678-478-11	LED BOARD	
8	4-229-518-01	PACKING (D)	
9	A-4412-321-A	CABINET ASSY	
10	4-229-514-01	PANEL, BOTTOM	
11	4-229-522-11	FOOT	
12	4-229-966-01	SCREW (4X16), +BV TAPPING	
SP1	1-529-764-11	SPEAKER (16cm)	
#1	7-685-163-01	SCREW +P4X16 TYPE1	
#2	7-685-646-79	SCREW +BVTP3X8 TYPE2 N-S	
#5	7-685-660-19	SCREW +BVTP4X10 TYPE2 N-S	

2-2. SA-WMS215 (2)

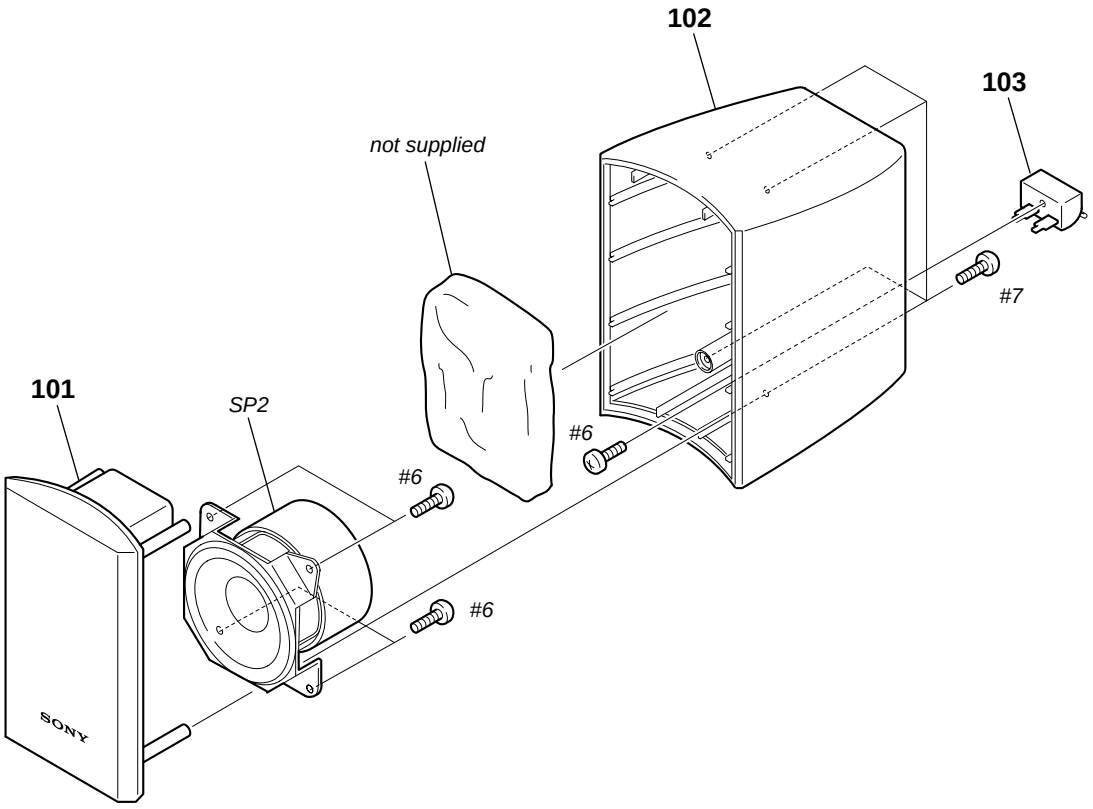


Ref. No.	Part No.	Description	Remarks
51	1-678-477-11	POWER IC BOARD	
52	A-4473-638-A	MAIN BOARD, COMPLETE	
53	1-678-474-11	POWER SUPPLY BOARD	
54	4-228-899-11	REAR PANEL (AEP,EE,CIS,CH,AUS,UK)	
54	4-228-899-21	REAR PANEL (HK,MY,SP)	
* 55	3-703-244-00	BUSHING (2104), CORD	

Ref. No.	Part No.	Description	Remarks
⚠56	1-777-071-11	CORD, POWER	
58	3-710-901-11	SCREW, TAPPING	
⚠T401	1-435-608-11	TRANSFORMER, POWER	
#3	7-685-647-79	SCREW +P3X10 TYPE2 NON-SLIT	
#4	7-685-648-79	SCREW +P3X12 TYPE2 NON-SLIT	
#5	7-685-660-19	SCREW +BVTP4X10 TYPE2 N-S	

The components identified by | 以阴影和 ⚠标志来识别的零

2-3. SS-MS215



Ref. No.	Part No.	Description	Remarks
101	A-4412-322-A	PANEL ASSY, FRONT	
102	A-4412-277-A	CABINET ASSY	
103	1-694-516-11	TERMINAL, SPEAKER	
SP2	1-529-763-11	SPEAKER (5cm)	

Ref. No.	Part No.	Description	Remarks
#6	4-986-971-11	SCREW (3.5)	
#7	3-703-564-81	SCREW (3.5X12), TAPPING	

SECTION 3
CONTROL LED MAIN ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- CAPACITORS:
  uF: µF
- RESISTORS
  All resistors are in ohms.
  METAL: metal-film resistor
  METAL OXIDE: Metal Oxide-film resistor
  F: nonflammable
- COILS
  uH: µH
- SEMICONDUCTORS
  In each case, u: µ, for example:
  uA...: µA... , uPA... , µPA... ,
  uPB... , µPB... , uPC... , µPC... ,
  uPD..., µPD...

When indicating parts by reference number, please include the board name.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

以阴影和⚠标志来识别的零部件在安全方面具有关键性。因此只能以规定号码的零部件来更换。

Ref. No.	Part No.	Description			Remarks
	1-678-475-11	CONTROL BOARD			
		**********			
		< CAPACITOR >			
C201	1-126-964-11	ELECT	10uF	20.00%	50V
		< CONNECTOR >			
* CN202	1-564-519-11	PLUG, CONNECTOR 4P			
		< VARIABLE RESISTOR >			
RV201	1-225-826-11	RES, VAR, CARBON 20K (LEVEL)			
**********					
	1-678-478-11	LED BOARD			
		**********			
*	4-937-336-32	HOLDER, LED			
		< CONNECTOR >			
CN801	1-506-481-11	PIN, CONNECTOR 2P			
		< DIODE >			
D801	8-719-080-25	DIODE SEL6414LF62 (POWER)			
**********					
	A-4473-638-A	MAIN BOARD, COMPLETE			
		**********			
		< CAPACITOR >			
C101	1-162-286-31	CERAMIC	220PF	10%	50V
C102	1-126-964-11	ELECT	10uF	20.00%	50V
C103	1-162-286-31	CERAMIC	220PF	10%	50V
C104	1-136-167-00	MYLAR	0.15uF	5.00%	50V
C105	1-136-159-00	MYLAR	0.033uF	5.00%	50V
C106	1-136-169-00	MYLAR	0.22uF	5.00%	50V
C107	1-136-169-00	MYLAR	0.22uF	5.00%	50V
C108	1-136-169-00	MYLAR	0.22uF	5.00%	50V
C109	1-136-169-00	MYLAR	0.22uF	5.00%	50V
C110	1-136-164-00	MYLAR	0.082uF	5.00%	50V
C111	1-136-168-00	MYLAR	0.18uF	5.00%	50V
C112	1-126-964-11	ELECT	10uF	20.00%	50V
C301	1-136-165-00	MYLAR	0.1uF	5.00%	50V
C302	1-126-933-11	ELECT	100uF	20.00%	16V
C305	1-136-169-00	MYLAR	0.22uF	5.00%	50V

Ref. No.	Part No.	Description			Remarks
C306	1-162-215-31	CERAMIC	47PF	5%	50V
C307	1-126-967-11	ELECT	47uF	20.00%	50V
C308	1-126-967-11	ELECT	47uF	20.00%	50V
C309	1-104-665-11	ELECT	100uF	20.00%	10V
C310	1-126-963-11	ELECT	4.7uF	20.00%	50V
C311	1-104-664-11	ELECT	47uF	20.00%	25V
C401	1-136-165-00	MYLAR	0.1uF	5.00%	50V
C402	1-136-165-00	MYLAR	0.1uF	5.00%	50V
C403	1-119-940-51	ELECT	4700uF	20.00%	50V
C404	1-119-940-51	ELECT	4700uF	20.00%	50V
C405	1-104-665-11	ELECT	100uF	20.00%	25V
C406	1-104-665-11	ELECT	100uF	20.00%	25V
		< CONNECTOR >			
* CN104	1-564-104-00	PIN, CONNECTOR (B3P-VH) 3P			
* CN105	1-568-951-11	PIN, CONNECTOR 2P			
CN106	1-691-765-11	PLUG (MICRO CONNECTOR) 3P			
CN109	1-564-320-00	PIN, CONNECTOR (B2P-VH) 2P			
		< DIODE >			
D301	8-719-911-19	DIODE 1SS133T-72			
D302	8-719-911-19	DIODE 1SS133T-72			
D303	8-719-911-19	DIODE 1SS133T-72			
D304	8-719-911-19	DIODE 1SS133T-72			
D401	8-719-025-03	DIODE RBA-402			
D402	8-719-068-44	DIODE HZ15BP-TK			
D403	8-719-068-44	DIODE HZ15BP-TK			
		< IC >			
IC101	8-759-634-50	IC M5218AL			
IC102	8-759-634-50	IC M5218AL			
IC103	8-759-634-50	IC M5218AL			
IC302	8-759-111-68	IC uPC1237HA			
		< JACK >			
J101	1-770-377-31	JACK, PIN 1P (LINE)			
		< TRANSISTOR >			
Q101	8-729-119-78	TRANSISTOR	2SC2785TP-E		
Q102	8-729-119-78	TRANSISTOR	2SC2785TP-E		
Q303	8-729-900-80	TRANSISTOR	BA1A4M-TP		

Ref. No.	Part No.	Description			Remarks
		< RESISTOR >			
R101	1-249-417-11	CARBON	1K	5%	1/4W F
R102	1-249-441-11	CARBON	100K	5%	1/4W
R103	1-249-441-11	CARBON	100K	5%	1/4W
R104	1-249-429-11	CARBON	10K	5%	1/4W
R105	1-249-429-11	CARBON	10K	5%	1/4W
R106	1-249-424-11	CARBON	3.9K	5%	1/4W F
R107	1-249-436-11	CARBON	39K	5%	1/4W
R108	1-249-424-11	CARBON	3.9K	5%	1/4W F
R109	1-249-417-11	CARBON	1K	5%	1/4W F
R110	1-249-435-11	CARBON	33K	5%	1/4W
R111	1-249-425-11	CARBON	4.7K	5%	1/4W F
R112	1-249-439-11	CARBON	68K	5%	1/4W
R113	1-249-417-11	CARBON	1K	5%	1/4W F
R114	1-249-417-11	CARBON	1K	5%	1/4W F
R115	1-249-435-11	CARBON	33K	5%	1/4W
R116	1-249-438-11	CARBON	56K	5%	1/4W
R117	1-249-427-11	CARBON	6.8K	5%	1/4W F
R118	1-249-427-11	CARBON	6.8K	5%	1/4W F
R119	1-249-427-11	CARBON	6.8K	5%	1/4W F
R303	1-249-427-11	CARBON	6.8K	5%	1/4W F
R304	1-249-433-11	CARBON	22K	5%	1/4W
R305	1-249-412-11	CARBON	390	5%	1/4W F
R307	1-249-478-81	CARBON	2.2	5%	1/2W
R308	1-249-433-11	CARBON	22K	5%	1/4W
R309	1-249-433-11	CARBON	22K	5%	1/4W
R310	1-249-441-11	CARBON	100K	5%	1/4W
R311	1-249-441-11	CARBON	100K	5%	1/4W
R312	1-249-427-11	CARBON	6.8K	5%	1/4W F
R313	1-249-429-11	CARBON	10K	5%	1/4W
R314	1-215-892-11	METAL OXIDE	1K	5%	2W
R315	1-249-439-11	CARBON	68K	5%	1/4W
R316	1-249-430-11	CARBON	12K	5%	1/4W
R318	1-215-868-00	METAL OXIDE	680	5%	1W
R401	1-216-456-00	METAL OXIDE	820	5%	2W
R402	1-216-456-00	METAL OXIDE	820	5%	2W
		< RELAY >			
RY301	1-515-920-11	RELAY (24V)			
**********					
	1-678-477-11	POWER IC BOARD			
		**********			
		< CAPACITOR >			
C304	1-162-286-31	CERAMIC	220PF	10%	50V
		< CONNECTOR >			
CN108	1-785-088-11	PIN, CONNECTOR 6P			
		< IC >			
IC301	8-759-299-53	IC LM3886T			
		< RESISTOR >			
R306	1-249-435-11	CARBON	33K	5%	1/4W
**********					

Ref. No.	Part No.	Description			Remarks
	1-678-474-11	POWER SUPPLY BOARD			
		**********			
	1-533-233-11	HOLDER, FUSE			
		< CAPACITOR >			
⚠C2	1-113-924-11	CERAMIC	0.0047uF	20.00% 250V	
		< CONNECTOR >			
CN101	1-564-321-00	PIN, CONNECTOR 2P			
* CN102	1-580-230-11	PIN, CONNECTOR (PC BOARD) 2P			
		< FUSE >			
⚠F401	1-532-500-31	FUSE TL 0.63A/250V			
**********					
	1-678-476-11	POWER SWITCH BOARD			
		**********			
		< CAPACITOR >			
⚠C1	1-113-915-11	CERAMIC	0.001uF	20.00% 250V	
		< CONNECTOR >			
* CN201	1-695-044-11	PIN, CONNECTOR 2P			
		< SWITCH >			
⚠S1	1-554-920-61	SWITCH, PUSH (AC POWER)(1 KEY)(POWER)			
**********					
		MISCELLANEOUS			
		**********			
⚠56	1-777-071-11	CORD, POWER			
103	1-694-516-11	TERMINAL, SPEAKER			
SP1	1-529-764-11	SPEAKER (16cm)			
SP2	1-529-763-11	SPEAKER (5cm)			
⚠T401	1-435-608-11	TRANSFORMER, POWER			
**********					
		ACCESSORIES & PACKING MATERIALS			
		**********			
⚠	1-770-019-11	ADAPTOR, CONVERSION PLUG 3P (UK, HK)			

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

以阴影和 ⚠ 标志来识别的零部件，在安全方面具有关键性，因此只能以规定号码的零部件来更换。

9-929-500-11

Sony Corporation
Audio Entertainment Group

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